

AN
ARRANGEMENT
OF
BRITISH PLANTS,

ACCORDING TO
THE LATEST IMPROVEMENTS
OF THE
Linnean System;
WITH AN EASY
INTRODUCTION TO THE STUDY OF BOTANY
ILLUSTRATED BY COPPER PLATES.

L. WILLIAM WITHERING, M.D. F.R.S.
MEMBER OF THE ROYAL ACADEMY OF SCIENCES AT LONDON; FELLOW OF THE LINNEAN
HONORARY MEMBER OF THE ROYAL MEDICAL SOCIETY AT EDINBURGH, &c.

THE SEVENTH EDITION.
IN FOUR VOLUMES:

INCLUDING THE LATEST RECENT DISCOVERIES, AND NUMEROUS ENLARGED ANNOTATIONS
ILLUSTRATIVE OF THE VEGETABLE ECONOMY.

BY **WILLIAM WITHERING, Esq. LL.D. F.R.S.**
EXTRAORDINARY MEMBER OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH; MEMBER OF THE
ROYAL SOCIETY OF LITERATURE OF THE UNITED KINGDOM, &c. &c. &c.

"Nor are the Plants, which Britain calls her own,
Few, or unlovely," MASON.

VOL. II

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1836.

"Flowers worthy of Paradise, which not nice art,
In bed and curious knots, but Nature boon
Pour'd forth profuse, on hill, and dale, and plain."
MILTON.

"I cannot but think the very complacency and satisfaction which a man takes in these works of Nature, to be a laudable, if not a virtuous habit of mind." ADDISON.

CLASS I.

MONANDRIA.

MONOGYNIA.

(1) (*Seeds several.* E.)

CHA RA. (*Berry with many seeds. Style none.* E.)

[*Salix monandria.*]

(2) (*Seed one.* F.)

HIPPU RIS. *Calyx none. Blossom none.*

SALICOR NIA. *Cal. one leaf, four-cornered, lopped, tumid.*
Bloss. none. (Seed included in the calyx. E.)

[*Valeriana repens, Alchemilla arvensis, Ophrys spiralis, & ovata.*]

DIGYNIA.

CALLITRICHE. *Cal. none. Bloss. two petals. Capsule*
two-celled.

[*Festuca myurus.*]

TETRA-GYNIA.

ZANNICHELLIA. *Invol. none.**

Barren Flower. Cal. none. Bloss. none.

Fertile Flower. Cal. one leaf. Bloss. none. Seeds four.

* (In vol. i. will be found the more accurate generic description, according to the views of a majority of older authors. We here briefly introduce a character drawn from the observation of recent writers, that the anther and pistil are mostly found together rarely on separate plants; so that the genus is not monoecious, though in one or two instances, occasionally dioecious. Sm. E.)

MONANDRIA. MONOGYNIA. CHARA.

MONOGYNIA.

Many-seeded. *Style* none. E.)

Prickles on the stem egg-shaped.

H. Ox. xv. 4. 9—*Pluk.* 29. 4.

Plant always flesh-coloured when alive, but when dry, ash-coloured.

Stem twisted. Inn. Brittle and gritty in the mouth. *Root* fibrous.

BRITTLE STONEWORT. (*C. hispida* β, Fl. Brit. Smith seems to think this plant scarcely differs from *C. hispida*; and that Linnæus was rather hasty in the appropriation of synonyms. E.) Ditches and pools. Peat ditches in Lancashire and Westmoreland, common. In the rivulet that runs from Malham Tarn before it sinks into the ground. Mr. Wood. (On a bog nearly opposite the house of Alyn Bank, near Mold, Flintshire. Mr. Griffiths. In wet pits where turf has been dug on Feckenham Bog, Worcestershire. Purton. E.)

C. VULGARIS. Stems without prickles: leaves toothed on the inner side.

E. Bot. 356—*Hedw.* Th. 32. 33—*C. B. Pr.* 25; and Th. 251—*Park.* 1201. 10—*J. B.* iii. 731. 2.

Stem thread-shaped, but little branched, six to nine inches long, flexible. *Leaves* thread-shaped, tapering, but just thinner than the stem; in whorls, expanding, mostly as long as the joints of the stem, jointed; the knots with prickles and often fructifications on the inside. *Flowers* either perfect, or barren, or fertile, sessile, on the same, on different plants; both tawny and white in the same plant, on the inner side of the leaves towards their base, two or three on a leaf, numerous on the upper whorls, distinct. *Cal. leaves* bristle-shaped, the two outer nearly twice as long. *Anther* protruding out of the calyx; evidently adhering to the base of the germen, and separable with it; unchanged in its form, and none burst in numbers which I examined, from whence some might be induced to suspect it to be rather a nectary. *Seed-vessel* tapering and greenish towards the end, which is crowned with five teeth, mostly shorter, but some times longer than the calyx. *Seeds* numerous, and minute, yellowish, or white. In one barren plant I found the calyx the same as in the perfect flowers. *St.—Plant* green when fresh, extremely fetid; glaucous when dry, and very brittle. *Leaves* sometimes seven or twelve in a whorl. *Woodw.* *Leaves* from six to twelve in a whorl. The teeth or prickles on the upper or inner side of the leaves are near the base, and more numerous on the upper than on the lower leaves. The stem and leaves are studded, not uniformly incrustated, with a hard whitish, gritty (calcareous) substance, which gives them, when fresh and magnified, some resemblance to the scalliness of a snake. The stems are much disposed to twist spirally. E.)

COMMON STONEWORT. FETID WATER-HORSE-TAIL. (Irish: *Clo Isk.* Welsh: *Rhawn y ebol cyffredin.* E.) Ditches and pools. A. July—Aug. Var. 1. Smaller. Huds.

Stems and *leaves* very slender. *Seeds* (anther) and germen) small, brown, shining, lying naked on the joints of the leaves. *R. Syn.* (Smith suspects

(χαρμόγ; or delight of the water. E.)

this var. only differs from the above by the accidental circumstance of growing in purer waters, thus escaping the calcareous incrustation. (B.) In a gutter in Peckham fields; not in the great ditches. Ray.

(Is the plant described and figured in *E. Bot.* 440, as *C. gracilis*, other than this var. of *C. vulgaris*? Or as Mr. Dawson Turner seems to conjecture, of *C. flexilis*? if we rightly understand his note in *Bot. Guide*, p. 598. And thus it appears to be designated by Messrs. Hooker and Greville. Sir J. E. Smith adds, "This species, and *C. flexilis*, first taught me to consider *Chara* as having no real leaves; which preceding writers have termed so, being in no respect different from the branches, in structure or economy, as they often bear the flowers." *E.*)

C. HISPIDA. Prickles on the stem hair-like, in clusters.

(*E. Bot.* 463. *E.*)—*Fl. Dan.* 154—*Pluk.* 193. 6.

Pale green when fresh. Prickles often reflexed. Linn.—*Plant* brittle, rough, incrustated with calcareous matter. *Stem* twisted spirally, its lower part and branches and lower leaves frequently naked; upper part thick set with prickles. *Leaves* eight to ten in a whorl. Prickles in bundles, at short distances on the upper side of the leaves, resembling half whorls. Not so fetid as *C. vulgaris*. Woodw. Whole plant with a strong scent of garlic, glaucous green. *Stem* branched. *Leaves* eight or ten in a whorl. *Germs* egg-shaped, of a dull pale yellow. *Summits* dirty green. *Anther* orange-coloured.

PRICKLY STONEWORT. (Irish: *Chirridin gauhair*. Welsh: *Rhann yr ebol gurychog*. *E.*) Ditches and pools, in Yorkshire, Lancashire, and Westmoreland. Tuff bogs, Ellingham, Norfolk. Mr. Woodward. At the bottom of a spring in a meadow near Gayton, Staffordshire. Stokes. (Formby ten miles N. of Liverpool, Dr. Bostock. Peat pits in Anglesey, not uncommon. Rev. H. Davies. In the water course by the side of Hinton Moor, Sawston Moor, &c. Cambridgeshire. Relhan. In bogs-pools on Wareham, Poole, and Cranford Heath, Pulteney. Stagnant waters about Rhyd Marsh, Flintshire. Mr. Griffith. Cromlyn Bog, near Swansea, with *C. flexilis*: and on Finchley Common, Middlesex. Mr. J. Wood, jun. *Guide*. Pools on Hartley Links, Northumberland. Mr. Winch. Ditches at Glassmount, Fifeshire. Greville. Frequent in the fen commons of Suffolk. *E.*) A. June—Oct.*

C. FLEXILIS. (Neither prickly, nor incrustated: leaves mostly cloven.)

(*E. Bot.* 1070. *E.*)—*Schmid.* 14.

Stems one or two feet long, growing under water, but near the surface, covered, not as the rest of the genus with an incrustation, but with a thin green rind. *Leaves* in whorls, which towards the root are two inches or more from each other, towards the end from one to half an inch; of the same structure with the stem, when fully grown from one to one inch and a half long. *Fructifications* naked, on the upper whorls, on the

* (Mr. Brunton, in the Botanist's review, observes that in the ditches near Ripon, where the water has never formed lime stone, this plant is beautifully green; in which case it possesses the property of absorbing carbonic acid gas, by which the lime has been held in solution, in a greater degree than any other water plant except perhaps *C. vulgaris*. Dr. Brewster and Greville are of opinion that the calcareous matter of the stem and branches of some species of *Chara* is produced by a peculiar economy of the plant itself, and not a mere adventitious incrustation; as it evidently originates from within, and is covered by the cuticle. An analogous process is observable in the siliceous deposit of the *Equiseta*. *E.*)

cloven leaves at the fork, and on the simple leaves about the same distance from the base. *Cal.* none, not even prickles as in other species. *Anth.* always single, sometimes solitary, but mostly with two germens: generally between them, but where only one germen, sometimes on one or the other side, or above it, never below, as in the other species; when first appearing white or straw-coloured; as it advances, pale yellow, becoming of a wax-like substance; when ripe of a reddish saffron colour, and at last brown; for the greater part hollow within, not divided into cells, but containing some pulp intermixed with very slender fibres or membranes, and some mealy grains of a saffron colour; never opening spontaneously; gradually shrivelling, decaying, and wasting away. *Seed-vessel* oval, somewhat tapering towards the point; the coat rather thin, composed as it were of five segments rolled spirally and terminating in the five summits. *Nucleus* covered with a very thin membrane, not marked with spiral lines, within full of white transparent globules, some spherical, others a little compressed, destructible by pressure, not wrinkled; whether to be considered seeds I do not determine. Schmid.*

MOORH STONEWORT. (Welsh: *Rhawn gr ebol hyblwg*. E.) Ponds, ditches, and bogs. Ponds about Henley, four miles N. of Ipswich. In a bog where the spa empties itself near Knaresborough. Ray. Salt water ditches near Horsey. Hudson. Loch Leonard. Parsons. Hill. Loch, on Craig Cailleach, Breadalbane, and at Conaie four miles from Crief. Mr. Stuart. In the third stew from the house at Edgbaston, near Birmingham. (In Llynauel, Llanfawr, Denbighshire, where I have seen it many yards in length. Mr. Griffiths. Gravel-pits near Epping Forest. Mr. J. Forster, jun. In Anglesey, not rare Bot. Gales. In an old quarry, in Lening-Lane, Durham. In Bromley lake near Shewing-Shields, Northumberland, and Derwent-water. Mr. J. Inch. In a stew at Cookhill, Worchestershire; and in ditches about Layton, Warwickshire. Purton. E.) A. June—Oct.

(Var. 1. Larger, transparent, flexible.

Act. Paris Ann. 1719. t. 3. f. 8.

β of Sm. Found in Berrington Pool, Shropshire, by the Rev. E. Williams. *Fl. Brit.*

Sir J. E. Smith, since the publication of *Fl. Brit.* has received fresh specimens discovered by Prof. Hooker, at Brownston, Suffolk, and is now inclined to believe it a new species, which in

E. Bot. 1855,

is named *C. translucens*, (*Great Transparent Chara*.) chiefly distinguished by the transverse internal partitions, noticed by Vaillant. E.)†

(The pollen, (usually discharged by the operation of warm dry weather contracting and bursting the coats of the anther, each grain forming a curious microscopic object of various form, and itself, on the contact of moisture, evolving a subtle vapour,) in aquatic plants destined to perform their functions under water, is, as in the different species of *Chara*, supplied with a peculiar protecting gluten. E.)

† (M. Bosc observes that fish, especially carp, thrive best in waters where the different species of *Chara* abound. The minute spirally-twisted fossil remains, found in chalk, and called *Cyprigones*, formerly believed of animal origin, are now considered to be the nucleus of *Chara*. It has been before remarked, (Walt. vol. i. p. 119,) that the mysterious structure of the plants of this genus had occasioned much diversity of opinion among phytologists, as to their proper station in the vegetable kingdom, nor does the accurate discrimination of the respective species prove an undertaking free from perplexity. Wallroth traces their affinity to the *Confervee*; and Dr. Greville, with the aid of high magnifying powers, detects a complex mechanism, with globules resembling spindles, containing elastic, convoluted filaments, minutely either jointed or transversely rugose. See *Fl. Edin.* E.)

(CH. NIDIFICA. Smooth, transparent, without prickles. Whorled branches. simple, elongated, without internal partitions; fertile ones axillary, compound. Bractæas unequal.

Fl. Dan. 761—*E. Bot.* 1:03.

The axillary branches which bear fructification, and rather numerous surrounding the main stem, within the long slender whorled branches, being themselves whorled and sub-divided, cause the bushy or profliferous aspect, which at first sight marks this species. *Apther* often stalked, especially when the plant is dioecious

PROLIFEROUS CHARA *C. nidifica*. *Fl. Dan.* In salt water ditches. Shoreham Harbour, Sussex; and near Cley, Norfolk.

A. Aug.—Oct. Eng. Fl. E.)

SALICORNIA.* *Cal.* tumid, entire. *Stam.* one or two. *Seed* one, (included in the calyx. E.)

S. HERBACEA. Herbaceous, wide spreading: joints flatted at the top, and notched.

Fl. Dan. 303—*Blackw.* 398—*Bast.* ii. 10. 3—*Matth.* 465—*Dod.* 82. 1—*Rob. Adv.* 170. 2—*Ger. Em.* 335. 1—*Pet.* 9. 3—*E. Bot.* 415—*S. annua*, and 4—*H. Ox.* v. 33. 8—*J. B.* iii. 705. 2. n. 1. 11. 111—*Park.* 280. 4—*Barr.* 192.

Widely spreading: hardly nine inches long. Lim. *Spike* jointed. *Flowers* near together, in one of its of the joint, three on each side. *Bast.*

JOINTED GLASSwort. SALTwort. SEA-GRASS. MARSH SAMPHIRE. *Salicornia Europæa herbacea*. Huds. (Welsh: *Llygrys llysiennadl*. E.) Sea shore, common.

A. Aug.—Sept.†

(S. FRUTICOSA. Stem upright, shrubby: joints cylindrical, equi-distant.

E. Bot. 2467—*Pet.* 9.

Evergreen, much larger than *S. herbacea*. *Joints* nearly of an equal thickness; blunt, very near together. *Stem* more branched than in the preceding species. *Ger.* (When two stamens occur, they appear in succession. E.)

SHRUBBY SAMPHIRE. *Salicornia Europæa fruticosa*. Huds. In the Isle of Sheppey. In the Isle of Grain in the Thames. Bilenius. On the sea shore, from Weymouth to Radpole. Mr. Yaldec. *Fl. Brit.* On the borders of Shoreham Harbour. Mr. Borrer. *Bot. Guide.*

P. Aug.—Sept. E.) ‡

* (*Sal.* salt; and *cornu*, a horn. E.)

† The young plant is herbaceous, the older one somewhat shrub-like, in which state it has been considered the *S. fruticosa* of Linæus, but that is not a native of Britain. Goodenough and Woodward. Upon this testimony, corroborating the opinions of Lightfoot and Hudson, in the third and fourth editions of our *Annuaire*, this plant was included with *S. herbacea* as the species. On further investigation, and particularly in accordance with the decision of Sir A. J. Smith, it is again restored to the distinction of a separate species, on the criterion of Linæus. L.) From the ashes of this plant, fossil alkali is obtained, which is in great request for making soap and glass. It is chiefly made on the coast of the Mediterranean, and is called Soda. The green plant steeped in salted vinegar makes a pickle very little inferior to samphire. (Chatham.) The whole plant has a saltish taste, and is greedily devoured by cattle (a remark corresponding with the observation of Sir H. Davy, that cattle in general prefer herbage impregnated with saline particles, rather than those plants in which the saccharine predominates. E.)

‡ (The *Salicornia* being destitute of leaves, are the more difficult to discriminate

HIPPURIS.* *Cal.* none. *Summit* simple. *Seed* one, (inferior. E.)

H. VULGARIS. *Leaves* awl-shaped, eight in a whorl.

Dicks. H. S.—*Curt.* 287—(*E. Bot.* 763. E.)—*Gisceke* 32—*Fl. Dan.* 87—*Dod.* 113. 2—*Lob. Ic.* i. 792. 2—*J. B.* iii. 732—*Ger.* 957. 6. misprinted 953—*C. B. Th.* 243. 4—*Park.* 1200. 4.

Leaves narrow: growing in whorls round the joints, twelve or more at each joint. *Flowers* equal in number to the leaves. *Stems* straight, jointed. The flower of this plant is found at the base of each leaf, and is as simple as can be conceived, there being neither calyx nor blossom; and only one stamen, one pistil, and one seed. Linn. (*Stem* twelve to eighteen inches above the water, reddish. Lower leaves under water pellucid, long, and pale; in winter bearing no other. Sm. A section of a transverse slice of the stem exhibits the air-cells, on the out-side of a central column, separated from each other by smaller cells, filled with aqueous fluid. Mr. Thomson remarks that all aquatic plants contain very large air-cells; which are most abundant in their stems, if their leaves be few or comparatively small, or the greater number is above the surface of the water; and in the leaves, if these be large or immersed. E.)

COMMON MARE'S-TAIL. PADDOWPIPE.† (Welsh: *Rhuw y gaseg cyffredin.* E.) Muddy ponds and ditches. Lochend and Duddleston Loch, near Edinburgh. Mr. Brown. Lake in Tortworth Park, Gloucestershire. Mr. Baker. Almost every where in muddy ditches in the N. W. of Lancashire. Mr. Hall. About a mile from Stafford, in ditches adjoining the foot-road to Aston. (At Bootle, and in ditches about Formby, near Liverpool. Dr. Bostock. About Bungay, very common. Mr. Woodward. Ditches adjoining Rhyd Marsh, near Prestatyn, Flintshire. Near the bridge entering Brockhall lawn from Norton, Northamptonshire. Mr. Griffith. Muddy ditches, Anglesey. Welsh Bot. In the Sheen, near the bridge at Darlington. Vinch Guide. In Old Eden, parish of Aldingham; and at Low Gelt Bridge, Brampton, Cumberland. Hutchinson. E.)

DIGYNIA.

CALLITRICHE.‡ *Cal.* none. *Pétals* two. *Seeds* four, naked; with a membranous border on one side: (flowers sometimes monoecious. E.)

C. VERNA. Upper leaves oval; not notched at the end.

(*Hook. Fl. Lond.* 127. E.)—*E. Bot.* 722.

The first authorities still differ in opinion respecting their specific distinctions. In Eng. Fl. they are divided into *S. herbacea*, *procumbens*, *radicans*, *fruticosa*, the learned author admitting that the two latter may prove to be only one species. Professor Hooker comprises *S. procumbens*, *E. Bot.* 2475, and *annua*, 415, in *herbacea*; *S. radicans*, *E. Bot.* 1691, in *fruticosa*, 2467. E.)

* (*Lower*, a boye, and *ovata*, a tail, from a fancied resemblance in its mode of growth. E.)
† (From Paddock or Puddock, a frog, in Scotch, and sometimes in old English; (*Shaksp. passim.*) as growing in the resort of those reptiles. E.)

‡ It is a weak astringent. Goats eat it, but cows, sheep, horses, and swine refuse it.

§ *Fl. Dan.*, beautiful, and *Sp. Pl.*, hair. E.)

Stems feeble, numerous, (thread-shaped, floating, or inundated. E.) *Bloss.* small, white, (axillary. E.) *Upper leaves* growing near together in form of a star; *lower* ones in pairs. (*Leaves* triple-ribbed. Sm. E.)

VERNAL STARGRASS. WATER STARWORT. WATER FENNEL. STAR-HEADED WATER CHICKWEED. (Welsh: *Brigwlydd gwanwynawl*. E.) *C. aquatica*. Fl. Brit. Hook. Fl. Lond. and Scot. Ditches, ponds, and slow streams, frequent. Apr.—May.

Var. 2. *Leaves* oblong. Flowers either stamiferous, pistilliferous, or perfect.

Ger. 830. 3—Park. 1258. 10—Pet. 6. 3.

Barren and *fertile flowers* frequently opposite each other, on different sides of the stem, in the bosom of the corresponding leaves. Mr. Wood. All the *leaves* sessile. *Lower leaves* spear-shaped, opposite, distant. *Upper leaves* slightly notched at the end. *Fertile flowers* in the bosom of the lower leaves; *barren* ones amongst the upper leaves, which are crowded together. *Petals* thick, flat, bowed inwards at the edge like a crescent. When magnified they appear to be a collection of air-vessels, and are undoubtedly intended to float the flower.

In ditches and still waters, frequent.

A. Apr.—May.

Var. 3. All the leaves roundish, on leaf-stalks, very entire, in pairs, except the lower ones. Hb. 553.

Fl. Dan. 129.—J. B. iii. 786. 2—Park. 1263. 2—Fructification. Vaill. 32. 10.

Var. 4. *Leaves* egg-shaped. Stamens and pistils variously disposed. Scop.

Col. Ecphr. 316

In places where water, that stood during the winter, has been dried up.

C. AUTUMNALIS. All the leaves strap-shaped, cloven at the end. Flowers perfect.

Pet. 6. 4—Gmel. iii. 1. 2.

Leaves oblong. *Stamens* and *pistils* in different plants. Scop. *Bloss.* yellowish white. (*Leaves* single-ribbed; more membranous, and much more minutely cellular, of a rich deep, permanent green. Sm. E.)

AUTUMNAL STARGRASS. (Welsh: *Brigwlydd cynaufaw*. E.) *C. aquatica* γ. Huds. Ditches and still waters frequent. Fl. Brit. A. Sept.*

Star-grass sometimes grows so thickly matted together as to allow a person to walk upon it without sinking.

* (Respecting the species of *Callitriche*, the best authorities differ in opinion. Dr. Sibthorpe assures us that *C. verna*, cultivated in the Oxford garden, changed into *C. autumnalis*; and the learned P. L. S. included both in his Fl. Brit. under Hudson's name of *C. aquatica*. Professor Hooker also considers the distinctions as "by no means constant;" but in a still more recent publication, Sir J. E. Smith has restored the two species. That in certain states of either there is an obvious difference cannot be doubted; yet may it not appear that the strap-shaped leaves of the submersed plants, on emerging, generally approximate the oval form? 21)

8 MONANDRIA. TETRAGYNIA. ZANNICHELLIA.

--TETRAGYNIA

ZANNICHELLIA.* Barren and Fertile Flowers on the same plant; apetalous.

Barr. Fl. Cal. none.

Fert. Fl. Cal. one leaf, bell-shaped. *Seeds* about four.

Z. PALUS[†]TRIS. (Anther four-celled: summit entire, but dilated.

E. Bot. 1844. *E.*)—*Mill. Ill.*—*Fl. Dan.* 97—*Pluk.* 102. 7—*Pet.* 6. 2—*Mich.* 34. 1.

The uncommon breadth of the *summits* is the most remarkable peculiarity in this plant; and whether they float upon the surface of the water, or are sunk beneath it, they are equally calculated to receive the pollen from the anthers which stand above them. *St.* The habit of *Potamogeton*; slender and much branched. *Leaves* grass-like, two, three, or four from the same sheathing stipula. *Seed-coats* sessile, three or four, placed crosswise in the bosom of the leaves; somewhat compressed, with a toothed ridge on each side, and an awl-shaped termination, giving them some resemblance to a bird's claw. *Woodw.*

(*Pericarpis* toothed on the back. *Stems* long, filiform, floating, branched, glabrous. *Leaves* numerous, opposite, linear, entire. *Flowers* small, axillary. *Grev.* *Summits* sometimes very slightly indented. *E.*)

HORNED LAKEWEED OF PONDWEED. Ditches and stagnant waters. Ditches near Bungay. Mr. Woodward. (Ditches adjoining Rhyl Marsh, near Prestatyn, Flintshire. Mr. Griffith. In Anglesey. Welsh Bot. Between Formby land-mark and the sea, ten miles N. of Liverpool. Dr. Bostock. Tiammore pool, in the Mersey, opposite to Liverpool. Mr. Shepherd. Ditches near Gateshead; near Hilton Castle, Durham. Mr. Winch. Feckenham Moors, Worcesterhire. Kilmarton and Ouseley, Warwickshire. Purton. Lozhead. Mr. Nees. *Grev.* *Edin.* *E.*)

A. June—July

(A Synoptical View of the Species of ORCHIDEÆ, according to the Arrangement of Robert Brown, Esq. F.R.S.)

ORCHIS MORIO. (*Orchis Morio*, Linn.) *Lip* three lobed, lobes scalloped, blunt, the middle notched at the end. *Petals* ascending, blunt. *Spur* conical, ascending, shorter than the germen.

ORCHIS MAS'cula. (*O. mascula*.) *Lip* three lobed; scalloped, blunt, the middle lobe bifid. *Petals* acute; the outer ones reflexed. *Spur* conical, ascending, as long as the germen.

ORCHIS USTULATA. (*O. ustulata*.) *Lip* with three divisions; the segments strap-shaped, rough with dots; the middle one bifid. *Petals* upright,

* (After the eminent Venetian apothecary and naturalist, ZANNICHELLI, who published a History of Plants, and flourished about 1702. P.)

† For the new Generic Characters, vid. vol. i. p. 12.

acute. *Spur* hooked at the end, only one third the length of the germen. *Floral-leaves* nearly as long as the germen.

ORCHIS FUSCA. (*O. militaris*, var.) *Lip* with three divisions, rough with dots; the lateral segments oblong; the middle one broad, notched at the end with a little point in the notch. *Petals* acute, approaching. *Spur* nearly straight, one third the length of the germen. *Floral-leaves* only one fourth that length.

ORCHIS MILITARIS. (*O. militaris*.) *Lip* with three divisions, rough with dots; the lateral segments strap-shaped; the middle one notched at the end, blunt, with a little point in the notch. *Petals* acute, approaching. *Spur* straight, half as long as the germen. *Floral-leaves* indistinct.

ORCHIS PYRAMIDALIS. (*O. pyramidalis*.) *Lip* with three divisions; bicornuate above; segments equal, very entire. *Spur* nearly as long as the germen. *Spike* dense, oblong.

ORCHIS HIRCINA. (*Satyrium hircinum*.) *Lip* with three divisions; the lateral segments strap-awl-shaped; the middle one elongate, to thrice the length of the germen, strap-shaped, bifid. *Petals* approaching. *Spur* very short, conical, double.

ORCHIS LATIFOLIA. (*O. latifolia*.) *Lip* slightly three-lobed, the sides reflexed. The upper *petals* approaching; the two lateral ones reflexed. *Spur* conical, shorter than the germen. *Floral-leaves* longer than the blossom.

ORCHIS MACULATA. (*O. maculata*.) *Lip* flat, three-lobed, scolloped. The upper *petals* approaching; the lateral ones expanding. *Spur* cylindrical, shorter than the germen. *Floral-leaves* as long as the germen.

GYMNADENIA CONOPSEA. (*O. Conopsea*.)

ACERAS ANTHROPOPHORA. (*Ophrys anthropophora*.) *Lip* longer than the germen.

HABENARIA MONORCHIS. (*O. monorchis*.) *Radical leaves* one pair, spear-shaped.

HABENARIA VERIDIS. (*Satyrium viride*.) *Spur* very short, two-lobed. *Lip* strap-shaped, tridentate, lateral divisions acute, the middle one very short. *Floral-leaves* much longer than the blossom.

HABENARIA ALBIDA. (*S. albidum*.) *Spur* blunt, one third the length of the germen. *Lip* with three divisions, segments acute, the middle one largest.

HABENARIA BIFOLIA. (*Orchis bifolia*.) *Spur* thread-shaped, twice the length of the germen. *Lip* strap-shaped, entire. *Radical leaves* one pair, oblong, attenuate at the base.

OPHRYS APHEIRA. (*O. insectifera*.) *Lip* three-cloven; the middle lobe the larger, semi-circular; the middle segment longer than the other, awl-shaped, recurved.

OPHRYS ARANIFERA. (*O. insectifera*, var.) *Lip* three-lobed; the lateral ones pointless, blunt; the middle ones obtusely emarginate.

OPHRYS MYSCIFERA. (*O. insectifera myodes*.) *Lip* three-cloven; the middle lobe the larger, divided. *Anthers* obtuse.

GOODYERA REPENS. (*Satyrium repens*.) *Radical leaves* egg-shaped. *Lip* and *petals* spear-shaped.

NEOTIA SPIRALIS. (*Ophrys spiralis*.) *Radical leaves* oblong, with some-

what obscure leaf-stalks. *Flowers* arranged spirally, but pointing one way, *Lip* of the nectary egg-shaped.

LIS'TERA OVA'TA. (*O. ovata.*) *Stem* two-leaved. *Leaves* egg-shaped, opposite. *Column* of fructification enlarged by a conical pouch which contains the anther.

***LIS'TERA CORDA'TA.** (*O. cordata.*) *Stem* two-leaved. *Leaves* heart-shaped, opposite. *Lip* with two teeth at the base; lobes strap-awl-shaped.

EPIPAC'TIS LATIFO'LIA. (*Serapias latifolia.*) *Leaves* egg-shaped, embracing the stem. Lower *floral leaves* longer than the drooping flowers. *Lip* entire, acuminate, shorter than the petals. *Germens* pubescent.

EPIPAC'TIS PALUS'TRIS. (*S. longifolia.*) *Leaves* spear-shaped, embracing the stem. *Floral leaves* shorter than the drooping flowers. *Lip* scoloped, blunt, as long as the petals. *Germens* pubescent.

EPIPAC'TIS PAL'LENS. (*S. grandiflora.*) *Leaves* oblong, spear-shaped, sessile. *Floral leaves* longer than the blossom, which is erect. *Lip* blunt, shorter than the petals. *Germens* smooth.

EPIPAC'TIS ENSIFO'LIA. (*S. ensifolia.*) *Leaves* spear-shaped, acuminate, subdistichous. *Floral-leaves* extremely small, awl-shaped. *Blossoms* erect. *Lip* blunt, half the length of the petals. *Germens* smooth.

EPIPAC'TIS RU'BRA. (*S. rubra.*) *Leaves* spear-shaped. *Floral-leaves* longer than the germen. *Blossoms* erect. *Lip* acute, marked with elevated undulating lines. *Germens* smooth.

MALAX'IS PALUDO'SA. (*Ophrys paludosa.*) *Leaves* about four, rough at the apex. *Stem* pentagonal. *Lip* concave, acute.

MALAX'IS LOESE'LII. (*O. Loeselii.*) *Leaves* two, egg-spear-shaped. *Stem* triangular. *Lip* obovate, recurved.

CORALLORRHIZA INNA'TA. (*O. corallorrhiza.*) *Spur* abbreviated, united to the germen.

CLASS II.

DIANDRIA.

MONOGYNIA.

[Scæhnus albus. Schænus mariscus. Lepidium ruderaie. Fraxinus excelsior.]

(1) *Bloss. one regular petal; beneath.*

LIGUSTRUM. *Bloss. four-cleft. Berry four-seeded.*

(2) *Bloss. irregular. Seeds in a capsule.*

VERONICA. *Bloss. border with four divisions, lower segment narrower. Caps. inversely heart-shaped, (of two cells. E.)*

PINGUICULA. *Bloss. gaping, terminating in a spur. Cal. five-cleft.*

UTRICULARIA. *Bloss. gaping, terminating in a spur. Cal. two leaves.*

(3) *Bloss. irregular. Seeds naked.*

LYCOPUS. *Bloss. nearly regular, one segment notched at the end. Stamens wide apart.*

VERBENA. (See Didynamia Gymnospermia.)

SALVIA. *Bloss. gaping. Filaments fixed transversely on a pedicle.*

[Salicornia herbacea.]

(4) *Flowers superior.*

CIRCÆA. *Cal. two leaves. Bloss. two petals inversely heart-shaped. (Caps. two-celled. Seeds solitary. E.)*

[Salix hermaprodica.]

(5) *Stamens on the Pistil.* ORCHIDÆ.

ORCHIS. *Nectary* terminating in a spur resembling a horn, behind the flower. *Bloss.* gaping.

SATYRIUM. *Nectary* ending in a purse, behind the flower, inflated.

O'PHRYS. *Nectary* somewhat keeled, (deflexed. E.)

MALAX'IS. *Nectary* one leaf, heart-shaped, binding round and inclosing the stamen and pistil.

SERA'PIAS. *Nectary* egg-shaped, gibbous beneath.

CYPRIFE'DIUM. *Nectary* inflated, tumid.

(6) *Plant frondose. Flowers apetalous.*

LEM'NA. *Bloss.* none. *Cal.* one-leaved. *Caps.* single-seeded.†

(7) *Flowers dioecious.*

SA'LIX.

Barr. Fl. *Cal.* Scale of a catkin. *Bloss.* none.

• c *Fert. Fl.* *Summits* two. *Caps.* two-valved. *Seeds* downy.

(8) *Flowers either Barren, Fertile, or Perfect.*

FRAX'INUS. *Cal.* none; or with four divisions. *Bloss.* none; or of four petals. *Seed* one, spear-shaped.

(9) *Flowers apetalous, or with four petals. Seed osseous. E.)*

CLA'DIUM. *Bloss.* none. *Glumes* of one valve, one-flowered, imbricated; outer glumes sterile. *Seed* a nut, with a loose external coat, (*Epicarp*,) destitute of bristles at its base. Hook. E.)

DIGYNIA.

ANTHOXANTHUM. *Calyx*, husk with one flower; oblong. *Bloss.* two husks; awned.

[*Buffonia. Serapias. Carex atrata. Bromus dianthus.*]

MONOGYNIA.

LIGUSTRUM.‡ *Bloss.* four-cleft: berry two-celled, two seeds in each cell.

* ("The *Orchis* race with varied beauty charm,
And mock the exploring bee or fly's aerial form." E.)

‡ (According to recent authors. E.)

† (*Ligo*, to bind, its twigs being flexible; but whether this be the plant originally designated by Pliny, remains doubtful. E.)

L. VULGARE. Leaves egg-spear-shaped, blunt, with a small point; panicle with three divisions.

Curt. 300—(*E. Bot.* 764. *E.*)—*Fl. Dan.* 1141—*Kniph.* 5.—*Mill.* 162. 2—*Math.* 170—*Blackw.* 140—*Ger.* 1208—*J. B.* i. 328. 2—*Fuchs.* 480—*Trag.* 1805—*Ger. Em.* 1394—*Suert.* ii. 38. 4.

Leaves frequently ternate, and enlarged at the base. *Berries* continuing through the winter. *Scop.* Blossoms white, (changing to rust-colour before they fall. *E.*), segments thick and fleshy. *Stamens* generally two, occasionally three or four, in each flower. *Leaves* very entire; growing in opposite pairs; (dark green, glabrous, sometimes variegated with white. *E.*) *Fruit-stalks* a little woolly when magnified; every other part of the plant perfectly smooth. (*Berries* globose, nauseously bitter, black or yellowish white. *E.*)

PRIVET. PRIM. PRINT. (Scotch: *Privy Saugh.* Welsa: *Ysweydden cyffredin.* *E.*) Hedges in gravelly soils. (In England generally evergreen; in Scotland only so partially, and in mild winters. In the humid atmosphere of Devon, making shoots of four or five feet in one season. *E.*) Frequent in the southern and western counties. Rocks of Dunnerholme, and above Cartmel Wells, in the most exposed situation to the western sea. Mr. Atkinson. (Rocks at Knott's Hole, near Liverpool, very much exposed to the sea air. Dr. Bostock. Hedges and copses in Huntingdonshire and Hertfordshire, common, Mr. Woodward. Lackenham, near Norwich. Mr. Crove. Hedges between Sunderland and Castle Eden. Winch Guide. (Sea-coast, Old Park, &c. Anglesey. Welsh Bot. Private road to the sea side Near Muttonhole. Grev. Edin. *E.*) S. June—July.*

CIRCÆA.† *Bloss.* two petals: *cal.* two-leaved, superior: (*Caps.* two-celled; *cells* one-seeded. *E.*)

C. LUTETIANA. Stem upright: bunches several: leaves egg-spear-shaped, hairy, somewhat serrated.

Curt. 202—(*E. Bot.* 1056. *E.*)—*Kniph.* 10—*H. Or.* v. 34. row 3. 1—*Lob. Ic.* 266. 2—*Ger.* 280—*Lob. Obs.* 137. 1—*Ger. Em.* 351. 1—*Park.* 351—*Fl. Dan.* 210.

Stem a foot and a half high; upright. *Leaves* somewhat serrated, opaque. *Bunches* terminal and lateral. **Cal.* much thicker and of a coarser tex-

* The berries are filled with a dry, spongy, violet pulp, from which a rose-coloured pigment may be prepared. *Scop.* With the addition of alum, the berries dye wool and silk of a good and durable green: for this purpose they must be gathered as soon as they are ripe. The leaves are bitter and slightly astringent. Oxen and goats eat it; (sheep devour it voraciously; the berries afford an acceptable winter food for birds, especially bullfinches. *E.*) Goats refuse it. The insects observed to feed upon this plant are *Sphinx ligustri* and *Myienn Syringaria*: (*Meloe vesicatorius*, blister-beetle, has been sometimes found on it. It yields much oleaginous and acid liquor by distillation, supposed to possess a defensive quality. Parkinson states that the berries, ground into powder, were exported to Turkey as a yellow dye, used for staining the nails and hands, and also horses' manes and tails on festivals. Privet will live, though scarcely flourish, under the drip of trees, and bears the smoky atmosphere of towns. It may be readily trained (by clipping) to cover lofty and unsightly walls, is easily propagated by cuttings, and is excellent for ornamental hedges. In its general character and elegant appearance it rivals the Box, and is, perhaps better entitled to the designation of *English Myrtle*. *E.*)

† (Named after CIRCÆ, the enchantress; and probably in the darker ages used in magical incantations. *E.*)

ture than the blossom, and not of the same colour. Linn. (*Calyx*, hairs hooked and tapering to a fine point. Grif. *Root* much creeping; difficult to extirpate. *Fl. Brit.* Flowers small, numerous in each bunch. E.) *Plant* smooth, or woolley, or rough with hair, sometimes red at the joints. *Leaves*, upper short; lower on long leaf-stalks. *Cup*, leaves reflexed, egg-spear-shaped; coloured. *Petals* reddish white, alternating with the leaves of the cup. *Filaments* thickest towards the top; white. *Anthers* white. *Germen* hairy, egg-shaped but compressed; placed under, and at a small distance from, the cup. *Style* thickest upwards, with a double green gland at its base. *Summit* a fine pink colour. *Caps.* set with white hairs, hooked at the end. *Little fruit-stalks* after flowering, pointing downwards.

ENCHANTER'S NIGHTSHADE. COMMON ENCHANTER'S-WORT. (Irish: *Fuinín Shcagh.* Welsh: *Swynyddlys, Llys Stephan cyffredin.* *C. racemosa*, var. *lutetiana*. Hull. E.) Woods; moist hedge bottoms, in shady lanes, not uncommon.

P. June—Aug.

C. ALPINA. Stem prostrate, supporting a single bunch of flowers: leaves heart-shaped, pointed, (smooth, serrated; calyx membranous. E.)

(E. Bot. 1057. E.)—H. Ox. v. 34. row 3. 1.

(Only three inches high when wild. *Calyx* hairs granulated, and ending in a small globule. Grif. E.) The general opinion that this and the preceding are distinct species is confirmed by Haller, who asserts that *C. alpina* cultivated in a garden does not become *C. lutetiana*. But it is not an easy task to point out any certain and invariable differences. The calyx and the joints being coloured or not; the leaves being hairy or smooth, opaque or pellucid, toothed or tooth-serrated; the panicle being one or more than one; the plant being simple or branched, upright or depressed, are circumstances which exist more or less in different specimens of both. Scopoli has justly observed, that the figure of the leaves affords the only specific distinction. *C. alpina* is a paler, more delicate, and smaller plant, not more than from five to ten inches high; while the former, though sometimes nearly as small and as delicate, is generally half a yard high. (Notwithstanding the apparent conclusive authority of Haller, with whom Smith and Hooker coincide, we are bound to state that experiments made in the Botanic Garden at Edinburgh, and the observation of Mr. Robson, would induce a belief that the two species pass into each other. E.)

ALPINE ENCHANTER'S NIGHTSHADE. MOUNTAIN ENCHANTER'S-WORT. (*C. racemosa*, var. *alpina*. Hull. E.) Rocky woods in Lancashire, Westmoreland, and Cumberland. Mr. Woodward. At a small village called

Hutchinson. London, on the road between Keswick and Cockermouth. Rev. J. Harriman. Bot. Guide. Below Castlehead Wood, near Keswick; Ashness Gill and Lowdore, Cumberland. Mr. Winch. Balsal Temple; Springfield; Warwickshire. Rev. W. Dree. Purton. N. W. bank of Loch Ness, opposite to Fyars. Dr. Bostock. P. July—Aug.

Var. 1. about the size of *C. lutetiana*: stem upright, with only one flowering head. *Fl. Brit.* Leaves of a yellowish green. Woodward. (Exactly intermediate between *C. lutetiana* and *alpina*, with delicate large leaves. Grev. E.)

Fl. Dan. 256.

C. alpina β. Sm. *C. intermedia*. Ehrh. Herb. 101.—Growing about fens. Mr. Woodward. (Near Stockport. Mr. W. Christy. In shady groves, near Matlock Bath. Sir J. E. Smith. Abundant in the Highland woods. Greville. E.)

VERONICA.* *Bloss.* border four-cleft; (wheel-shaped, E.); the lower segment narrowest: *caps.* two-celled; notched at the end.

(1) *Flowers in spikes.*

V. SPICATA. Spike terminal; leaves opposite, blunt, scolloped: stem ascending; undivided. Linn. Spike conical: leaves spear-shaped: stamens much longer than the blossom.

E. Bot. 2—*Fl. Dan.* 52—*Kniph.* 4—*Clus.* i. 347. 3—*Lob. Obs.* 250. 3—*Ger. Em.* 627. 4—*Vaill.* 33. 4—*J. B.* iii. 282; 3 and 4—*H. Ox.* iii. 22. 4

(Plant from four to eight inches high. Stem ascending, undivided. E.) Spikes sometimes more than one on a root. Reich. Leaves narrower in proportion to their length and more pointed than in the next species. Bloss. blue. Anthers blue. (Leaves sometimes strap-shaped, and very entire. Woodw. E.)

UPRIGHT SPIKED SPEEDWELL. SMALLEST FLUELLIN. Mountainous moist pastures. Cavenham Heath, near Bury, Suffolk, and near Penny Bridge, Lancashire. Woodward. (On the wall of St. John's College. Rev. R. Relhan. Side of Llandidno Rocks, Carnarvonshire; and above the lead-mines, near Prestatyn, Flintshire; and on the upper part of Cefn Rocks, above the cave, near St. Asaph. Mr. Griffith. About Penzance. E.)

P. June.

V. HYBRIDA. Spikes terminal, cylindrical; leaves opposite, bluntly serrated, rough, spear-egg-shaped. (Stem upright, not perfectly simple. E.)

(*E. Bot.* 673. E.)—*Ray* 11.

(Larger and rather more hairy, especially about the calyx, than the preceding, having usually one or two lateral spikes, or rudiments of them. Lower leaves nearly ovate. Sm. E.) Leaf-stalks bordered. Bloss. blue, the tubular part hirsute within. Leaves thick and fleshy, rough with white short hairs, which grow out of small prominent glands.

WELSH SPEEDWELL. BUGLE-LEAVED SPEEDWELL. On Craig Wreiddin, Montgomeryshire. Umpherhead, a steep rock at Cartmell Wells, plentiful. Mr. Hall. (Near Penny Bridge, Low Furness, Lancashire. Mr. Woodward. Hyssva Bengam and Trigfylchi Rocks, near the Glades, Carnarvonshire. Evans. St. Vincent's Rocks, near the Giant's Cave, Bristol. Dyer. Dodnbed Hill, Painswick, beyond the encampment, beside the Cheltenham road. Mr. O. Roberts. E.)

P. July.

V. ARVEN'SIS. (Spike terminal: leaves egg-shaped, sessile, deeply serrated: floral parts spear-shaped, longer than the flowers, entire. E.)

* (From the Roman saint of that name, but how connected is not obvious. Among various conjectures as to the origin of this name, the most rational seems to be that it was compounded of the Greek words *epo*, to bring, and *nia*, victory; alluding to its supposed efficacy in subduing diseases. E.)

Curt. 133—(*E. Bot.* 734. *E.*)—*Col. Phyt.* 8—*J. B.* iii. 367. 2—*Ger.* 489. 8
—*Ger. Em.* 613. 7—*Park.* 762. 4.

This plant formerly stood in the third subdivision next after *V. agrestis*, but it bears its flowers in such a spike-like form, that many Botanists have been misled by that arrangement.

Plant mostly upright, stiff and dry in its habit, (four to six inches high, frequently branched at the base, pale green, rough with hairs. *Bloss.* very small, pale blue, white within the centre, solitary, nearly sessile. *Capsule* compressed, ciliated. *E.*) *Root-leaves*, and sometimes the lower stem-leaves, on leaf-stalks. *Bloss.* pale blue.

WALL SPEEDWELL. SPEEDWELL CHICKWEED. (Welsh: *Mar-rhwyddwyn. E.*) On old walls; amongst rubbish; and in fallow fields. A. May.

V. VERNA. Spike terminal; flowers solitary: leaves with finger-like divisions: fruit-stalks shorter than the calyx.

(*Dicks. H. S. E.*)—*E. Bot.* 25—*Rose* 2. 1—*Fl. Dan.* 252.

(*Stem* stiff, upright, from one to four inches high, unequally downy. *E.*) *Leaves* wing-cleft; in one specimen gathered near Bury, spear-shaped, toothed, seven lines long, though the whole plant only two inches high. *Woodw.* (In a starved state few or none of the *leaves* are divided. *Sm. E.*) *Cal.* much longer than the blossom, and deeply divided into four spear-shaped, blunt, unequal segments. *Bloss.* blue, (with darker streaks, *E.*) green at the base. *Floral-leaves* spear-shaped, blunt. *Fruit-stalks* so short as to give the assemblage of flowers the appearance of a spike, and justify our removal of it from the third subdivision of the species. In its habit it has some resemblance to *V. arvensis*, but is readily distinguished from that by its finger-like, or rather wing-cleft leaves. (and much smaller size. *E.*)

VERNAL SPEEDWELL. Dry, barren soil; old walls and rocks; near Bury, in the most dry and driving sand; the plant is frequently nearly buried in it. *Mr. Woodward.* (Balking Hill, Harleston, Norfolk. *Rev. H. Tilney,* in *Bot. Guide.* In the Rye at Wordwell, West Staw, and Icklingham, Suffolk. *Sir T. G. Cullum,* its first discoverer. *E.*)

A. April—May.

V. OFFICINALIS. Spikes on lateral fruit-stalks: leaves opposite: stem trailing.

(*E. Bot.* 765. *E.*)—*Joub.* 100—*Curt.* 198—*Kniph.* 4—*Fl. Dan.* 218—*Woodw.* 219—*Ger.* 502. 1—*Riv.* 93. 2. *Veronica*—*J. B.* iii. 282. 1—*Blackw.* 143—*Fuchs.* 166—*Trag.* 207—*J. B.* iii. 282. 2—*Math.* 693—*Dod.* 40. 3. —*Lob. Obs.* 250. 2—*Ger. Em.* 626. 2—*Park.* 550. 2—*H. Ox.* ii. 22. 7.

Stems procumbent, half a foot to a foot or more in length, pubescent, as is the whole plant more or less with short jointed hairs. *E.*) *Little fruit-stalks* shorter than the floral leaves. *Tubercles* of the blossom about half as long as the cup, white. *Border* pale purplish blue; the broadest segment marked with six or seven deeper purple streaks; the narrowest segment with three, and each of the lateral segments with four. *Leaves* egg-shaped, serrated; hairy underneath, and at the edges. *Floral-leaves* strap-shaped. Some of the *fruit stalks* are so near the end of the stem that at first view they appear terminal, but upon more accurate examination we find one or more pairs of leaves beyond them.

(A variety is found on several mountains of Scotland and Ireland, “differing in the total absence of pubescence or roughness on the stems and

leaves, and in the very dense spike of brilliant flowers." *V. Allionii*. Hook. Scot. but not the real species so named of the south of Europe, which according to Smith, is "totally distinct." *V. hirsuta*, chiefly distinguished by its abrupt, undivided, not heart-shaped, capsule, appears in Eng. Fl. and Fl. Scot. under very suspicious circumstances as a species. This diminutive plant, not exceeding two or three inches in height, first attracted the notice of Mr. James Smith, of Ayr, on dry heathy places in the district of Carrick. It is admitted to "look like a starved specimen of *V. officinalis*." E.)

COMMON SPEEDWELL. FLUWELIN. (Irish: *Luss cre*. Welsh: *Rhyddwyn meddygawl*, *Gwrnerth*, *Jentawdd*. E.) Barren ground; heaths. P. May—Aug.*

(2) *Flowers in a bunch-like corymb.*

(V. FRUTICULO'SA. Corymb terminal, many-towered, spiked; leaves spear-shaped, blunt; stems upright, somewhat shrubby; capsule egg-shaped, four-valved.

E. Bot. 1028—Hal. t. 16. f. 1.

Stems trailing and perennial at the bottom, upright and dying down at top; rather downy. Leaves opposite, rather concave, sometimes scalloped, and hairy at the edges. Calyx with four equal clefts, slightly pubescent. Fruit-stalks longer than the floral leaves. Capsule hairy. Corymb hairy, at last extending into a very long and leafy bunch. Fruit large. Bloss. pale, flesh-coloured, white, or with bloody streaks, not large.

FLESH-COLOURED SHRUBBY SPEEDWELL. *V. frutescens*. Scop. Moist mountainous situations in Scotland; on Cruachan, Argyleshire. Rev. Dr. Walker. Ben Lawers. Mr. Brown. Fl. Brit. S. May—July. E.)

V. ALPINA. Corymb terminal: leaves opposite, (egg-shaped, glabrous, slightly serrated. E.) calyx fringed with hair.

(Hook. Fl. Lond. 208—E. Bot. 484. E.)—Hall. Hist. 13. 2—Fl. Lapp. 9. 4—Fl. Dan. 16.

Branchless, (unless at the very bottom, ascending to four or five inches in height. E.) Leaves all sessile; lower leaves elliptical, middle-leaves egg-shaped, upper leaves spear-shaped, and even strap-shaped and alternate: the larger leaves with one or two teeth. Linn. Bloss. small, not a fine blue. Hal. Flowers forming a compact head. (Leaves sometimes entire; herbage bearing white jointed hairs. Sm. The larger-sized serrated leaves, erect growth, and the dark blue almost sessile flowers, nestled in a very short and dense corymb among the upper leaves, will serve to distinguish *V. alpina* from *V. serpyllifolia*; which has sometimes been mistaken for it. Hook.

ALPINE SPEEDWELL. E.) On Ben Nevis, and on mountains near Garway Moor, ascertained by Mr. Dickson. On Ben Bouni, and Lochain y Gair near Invercauld. Mr. Brown. On the mountains of Badenoch. Mr. J. Mackay. On Cairn Toul, at the head of Dee. Mr. Anderson, E.)

P. Aug.

* The leaves have a slight degree of astringency and bitterness. An infusion of them is recommended by Hoffman and Francus, as a substitute for tea, but it is more astringent and less grateful. It is taken by cows, sheep, goats, and horses; and none refuse it.

V. SAXATILIS. (Bunch terminal, somewhat like a corymb, few-flowered; leaves opposite, nearly egg-shaped, smoothish, slightly scolloped; fruit-stalks longer than the floral-leaves; stems spreading, ligneous below; capsule four-valved. E.)

Fl. Dan. 342—(*E. Bot.* 1027. E.)—*Hall. Hist.* 16. 1—*Jacq. Coll.* 4. 5—*H. Or.* iii. 22. 5—*Clus.* i. 347. 1—*Park.* 551. 7.

(Of more humble and spreading growth than *V. fruticulosa*. Sm. E.) *Leaves* smooth and almost glossy; serratures wide asunder. *Flowers* mostly terminal. *Bloss.* blue-red, with purple streaks; lower segments paler: very small, not veined. *Fruit* egg-shaped, compressed; not notched at the end; valves four, acute, opening with a jerk. *Hal.* (*Flowers* three to five in a terminal corymb. *Calyx* four-cleft, nearly equal, blunt, woolly. *Fl. Brit.* Prof. Hooker considers the *capsule* as having only two valves, which, parting some way down from the apex, appear as four. E.)

BLUE ROCK SPEEDWELL. On rocks; very rare. Ben Lawers. Found by Mr. Dickson. (Glen Tilt. Mr. Winch. Maol Greadha, Bredalbhan. Mr. Borrer. E.) P. June—July.

V. SERPYLLIFOLIA. Bunch terminal, somewhat spike-like: leaves egg-shaped, smooth, scolloped. three ribbed: stamens hardly longer than the blossom.

Curt.—*Fl. Dan.* 492—(*E. Bot.* 1075. E.)—*Walc.*—*Dod.* 41. 1—*Lob. Obs.* 250. 4—*Ger. Em.* 627. 2—*J. B.* iii. 245. 1—*Rin.* 99. *Veronica minima repens*—*Pluk.* 233. 4—*Ger.* 503. 3.

The *stamens* in *V. spicata* being much longer than the blossom, whilst in *V. serpyllifolia* they are generally shorter, the distinction of the two species cannot, on actual comparison, occasion any difficulty; and if the flowering be past, the three-fibred *leaves* of the latter will still distinguish them. *Stems* cylindrical, (more or less procumbent, three to five inches long. E.) several rising from the same root, but frequent: each has its own particular root; and if branched, only so near the root, bearing from five to seven pair of leaves; mostly opposite: the upper ones intermixed with the flowers. *Leaves* egg-shaped, sessile, very slightly scolloped, (smooth in wet situations, hairy in dry. Sm. E.) *Upper floral-leaves* alternate, spear-shaped, twice as long as the fruit-stalks. *Flowers* on short fruit-stalks, one, rising out of the base of each floral leaf. *Bloss.* pale blue; (sometimes flesh-coloured, or white; E.) upper segment with five or eight purple streaks, lateral segments with three; smallest segment white.

(*Var. 2. Humifusa.* Plant entirely prostrate. Stems a palm in length, branched, creeping, striking root. Leaves roughish. Flowers few, crowded. Dicks. in Linn. Tr. ii. wherein it is described as a species, and was as such adopted by our Author; but its claim to such distinction has not been realized. It is found under wet dripping rocks among Highland mountains. E.)

SMOOTH SPEEDWELL. PAUL'S BETON. (Welsh: *Rhwyddlwyn gryuddail*. E.) Meadows and pastures, not uncommon. P. May—June.

V. BECCABUNGA. Bunches lateral: leaves egg-shaped, flat: stem creeping.

(*E. Bot.* 655 E.)—*Ludw.* 30—*Curt.*—*Kniph.* 9—*Sheldr.* (Brookl.)—*Woodw.* 20—*Rus.* 160, *Beccabunga*—*Walc.*—*Fuch.* 725—*Trag.* 188—*Blackw.*

48. 1 and 2—*Fl. Dan.* 511—*Dod.* 593. 1—*Lob. Obs.* 248. 3—*Ger. Em.* 620. 1—*Park.* 1236. 1—*H. Or.* iii. 24. 24—*Ger.* 496. 1.

(*Stems* procumbent, or sometimes floating, cylindrical, sending out long fibrous roots. Whole plant smooth and succulent. *Leaves* variously serrated. *Germs* sessile, on a thick yellowish green glandular substance. *Bloss.* blue, (numerous, disposed in long stalked clusters. E.)

BROOKLIME. (Welsh: *Gaferini*, *Llychlyn y dwr.* E.) Slow shallow streams, and near springs that seldom freeze. P. June—July.*

V. ANAGALLIS. Bunches lateral, (opposite. E.) leaves spear-shaped. serrated: stem upright.

Fl. Dan. 903—*Curt.* 332—(E. Bot. 784. E.)—*Ger.* 496. 3—*Pet.* 51. 12—*Ger.* 496. 2—*Ger. Em.* 620. 2—*Riv.* 100—*J. B.* iii. 791. 1—*Blackw.* 48. 3—*H. Or.* iii. 24. 25.

(*Plant* one to two feet high, smooth, in general larger than the preceding, with more serrated and rather paler leaves. E.) *Leaves* opposite, sessile. *Bunches of flowers* ascending from the bosom of the leaves. *Bloss.* pale purplish blue.

WATER SPEEDWELL. LONG-LEAVED BROOKLIME. (Irish: *Falcáire fháin.* Welsh: *Gracalllys y dwr.* E.) Slow streams and shallow ponds. S. side of the King's Park, Edinburgh. Mr. Brown. Ditches about Tamworth. (Crosby, and Garston, near Liverpool. Mr. Shepherd. In Ouse Burn, Prestwick Car, and ditches near Tynemouth. Mr. Winch. Nicholas Meadow, Warwick. Perry. In Anglesey. Welsh Bot. E.) P. July—Aug. Var. 1. *Bloss.* of a beautiful pink.

Wide ditches on the sides of the road from Gloucester to Tewkesbury.

V. SCUTELLATA. Bunches lateral. thinly set with flowers, wide spreading, alternate: little fruit-stalks pendent: leaves strap-shaped.

Curt. 333—(E. Bot. 784. E.)—*Kniph.* 10—*Riv.* 96, *F. pal. angustifol.*—*Fl. Dan.* 209—*J. B.* iii. 791. 2—*H. Or.* iii. 24. 27.

Bunches slender, caecid. diffuse. Linn. (*Plant* slender, eight to ten inches high, either smooth or woolly according to its growth either in moist or dry ground. E.) *Stem* often trailing, and sending out roots from the joints. *Leaves* nearly horizontal, spear-shaped, but narrow; set with two or three pairs of very minute teeth, mostly on the lower leaves. *Fruit-stalk* zig-zag. *Bloss.* white, or purplish, (streaked with blue lines. *Capsule* large, didymous. E.)

NARROW LEAVED MARSH SPEEDWELL. (Welsh: *Rhwyddllwyn cuddaill y gors.* E.) Poor swampy soil. Boggy meadows near Bungay; and in the Cambridgeshire fens. Woodward. Broadmoor near Hales Owen, salop. Ditches about Tamworth. (S. end of Wavertree, near Liverpool, and about Bootle layd-mark. Mr. Shepherd. Or Poole and Calford heaths; in Purbeck. Pulteney. On Newcastle Town Moor. Mr. Winch. Shelfield; Colehill Bog, Warwickshire. Purton. Bogs on Haldon, and Bogy Heathfield, Devon. Rev. J. Pike Jones. Culgarth Moor, Kirkland, Cumberland. Hutchinson. Anglesey. Welsh Bot. S. side of Duddingston Loch; Braid Hill Marshes. Grev. Edin. E.)

* The leaves are mild and succulent, and are eaten in salads early in the spring. Cows, goats, and horses eat it, swine refuse it. This, and some other species of *Veronica*, afford nourishment to *Papilio cinzia*, *Curculio* and *Chrysomela Bobabar*, &c.

V. MONTANA. Bunches lateral, of few flowers: calyx rough with hair: leaves egg-shaped, scalloped, on leaf-stalks: stem feeble.

Jacq. Austr. 109—*Curt.* 220—(*E. Bot.* 766. E.)—*Col. Ecphr.* 288—*Pet.* 51. 4—*H. Ox.* iii. 23. 15—*Riv.* 23—*Park.* 589. 3.

Stems hairy all round, six to twelve inches long, ascending, weak. *Bloss.* pale blue, veined, few, small. *Caps.* large, of two orbicular lobes, ciliated. E.) In its general habit this plant resembles *V. Chamædrys*, but if the sessile leaves of the latter, and the leaf-stalks of the former should not be thought sufficient to distinguish them, it may be further observed, that in *V. montana* the leaves are reddish underneath, heart-shaped, but blunt; the stem hairy all over, and the flowers smaller. (*Caps.* thrice as large as those of *V. Chamædrys*. Sm. E.) Its usual stations, in moist woods and other shady places, do not well accord with its trivial name.

MOUNTAIN MADWORT. MOUNTAIN GERMANDER SPEEDWELL. (Welsh: *Rhwgddwyn mynyddau*.) Moist woods, in calcareous soil. E.) Woods at the west end of Powick-ham, Worcestershire. Dr. Stokes. Kirkstall Abbey, Leeds. Mr. Aikin. Shortwood, Pucklécchurch, Gloucestershire, plentiful. Rev. G. Swayne. (At the entrance to Kent's Hole, near Torquay, Devon. Rev. Pike Jones. Woods near Roslin. Mr. Brown. Armingham Wood, near Norwich. Mr. Woodward. In most of the woods about Dover. Dillwyn. Woods near Plasnewydd, and Baron Hill, in Anglesey. Rev. H. Davies. On the bank below the wood at Friar's Goose, near Newcastle; Cawsey Wood; Heaton Woods, &c. near Newcastle-upon-Tyne; and at Wallow Craig, near Keswick. Mr. Winch. Woods and hedges at Eversholt, Bedfordshire. Abbot. Woody part of the Devil's Ditch, Newmarket Heath. Relhan. Near the rivulet in Garn dingle, near Denbigh, and in the upper wood at Tower, near Mold, and other woods about Mold. Mr. Griffith. Leigh Wood, Bristol. Dyer. About Colebrook Dale, plentifully. Turner, in Bot. Guide. E.)

P. May—June.

V. CHAMÆDRYS. Bunches lateral: leaves egg-shaped, sessile, wrinkled, deeply serrated: stem hirsute, but the hairs disposed only in two opposite longitudinal lines.

Curt.—*Kniph.* 11—*Fuch.* 872—*Trag.* 203—*J. B.* iii. 286. 1—*Fl. Dan.* 448—*Walc.*—*Ger.* 530. 4—*Riv.* 94—*V. prat. latif.*—*Clus.* i. 352. 1—*Ger. Em.* 651 3—*Lob. Obs.* 250. 4—*H. Ox.* iii. 32. 12.

Bunches frequently opposite. (Stem somewhat ascending, a foot long. *Bloss.* numerous, large, bright blue, with darker streaks, and a white centre, outside pale and flesh-coloured. *Caps.* small, inversely heart-shaped. This plant differs essentially from the preceding species, and is of much more frequent occurrence. E.)

WILD GERMANDER. GERMANDER SPEEDWELL. (Irish: *Eloough*. Welsh: *Rhwgddlyn blegynnau*. E.) Pastures, sides of hedges, common. (A variety of this plant, with white flowers, grows at Udimere, near Rye, Sussex. Mr. Borrer, in Bot. Guide. E.)

P. May.*

* The leaves are a better substitute for tea than those of *V. officinalis*, being more grateful and less astringent. Cows and goats eat it; sheep, horses, and swine refuse it. (This elegant little flower, which only expands in fine weather, ("the celestial bird's eye blossom," as Phillips happily designates it,) has sometimes been mistaken for the real "Forget me not" of the Continent, and certainly rivals, in pleasing delicacy of form and colour, that symbol of fidelity: but the legend bespeaks an aquatic. See *Myosotis palustris*.)

(S) *Fruit-stalks with one flower.*

V. AGRESTIS. Flowers solitary: leaves heart-egg-shaped, on leaf-stalks, shorter than the fruit-stalks. (Seeds cupped. Sm. E.)

Curt.—(E. Bot. 783. E.)—*Fl. Dan.* 449—*Riv.* 99. *V. fol. Chamard.*—*Walc.*—*Fuch.* 22—*J. B.* iii. 367. 1—*H. Ox.* iii. 24. 22—*Dod.* 31. 4—*Ger. Em.* 616. 1—*Park* 762. 4.

Bloss. small, either bright blue, or white, or with some blue and some white segments. **Seeds** from four to eight in each cell. **Stems** feeble, trailing, (three to nine inches long, slightly hairy. **Flower-stalks** recurved when bearing fruit. E.) **Leaves** serrated, serratures blunt; upper leaves nearly egg-shaped.

GERMANDER CHICKWEED. PROCUMBENT SPEEDWELL. (Welsh: *Rhwyddwyn gorweddawl*. E.) Pastures, ploughed fields, and in gardens a common weed. A. March to Sept.

V. HEDERIFOLIA. Flowers solitary: leaves heart-shaped, flat, five-lobed. (Seeds cupped, wrinkled. Sm. E.)

Curt. 110—(E. Bot. 784. E.)—*Walc.*—*Fl. Dan.* 428—*Riv.* 99. *V. fol. Hederae*—*Dod.* 31. 1—*Lob. Obs.* 247. 1—*Ger. Em.* 616. 3—*Park.* 762. 3—*J. B.* iii. 368. 2—*H. Ox.* iii. 24. 20.

Seeds dimpled at the top; two in each cell. (Plant with several procumbent stems, wide-spreading, succulent, extending from six to eighteen inches. E.) **Stem** a hollow cylinder, surrounding a strong, elastic, thread-like fibre, as in *Alsine media*. **Leaves**, lobes from three to six, though mostly five; very unequal, the middle segment the broadest. One **fruit-stalk** from the bosom of each leaf-stalk. **S. Vess.** like two united globes, rather than heart-shaped. **Calyx** fringed with long white hairs. **Bloss.** pale blue, streaked.

SMALL HENBIT; IVY CHICKWEED. IVY-LEAVED SPEEDWELL. (WINTER-WEED, in Norfolk. Welsh: *Rhwyddwyn eiddew-ddail*. E.) Hedge banks; ploughed fields. A. April—May.

V. TRIPHYLLOS. Flowers solitary: upper leaves with finger-like divisions: fruit-stalks longer than the calyx: (seeds flat. Sm. E.)

Curt. 68—*Fl. Dan.* 627—*E. Bot.* 26—*Riv.* 96. *V. fol. Riva.*—*Kniph.* 11—*J. B.* iii. 368. 1—*Lob. Ic.* 464—*Ger. Em.* 612. 5—*Park.* 1260. 6—*H. Ox.* iii. 24. 23.

(Plant somewhat downy. **Stem** three or four inches high, E.) sometimes unbranched. **Branches** from the base of the stem or near it, and rising to the same height as the stem. **Leaflets** in threes and fives. **Root-leaves**, undivided, rarely found; well represented in J. B.'s figure. **Lower stem-leaves** heart-shaped, jagged. **Bloss.** blue. **Capsules** large, (inversely heart-shaped, compressed, hairy. Sm. E.) **Woodw.** Although the leaves just above the root sometimes resemble those of *V. hederifolia*, the deep finger-like divisions of the upper leaves, and the want of leaf-stalks, preclude all possibility of mistake.

BRIGHT CHICKWEED. TRIFID SPEEDWELL. Sandy fields. Near Cockley Cley, Norfolk, and Bury, Suffolk. Mr. Woodward. (Fields at Barton Bandish, adjoining Swaffham Heath, Norfolk. Turner, in Bot. Guide. Plentiful on Barham Heath. Rev. W. Kirby; and Aldborough, the inclosure next the marshes at the entrance of the town. Rev. G. Crabbe, ditto. E.) A. April—May.

PINGUIC'ULA.* *Bloss.* gaping, terminating in a spur: *Cal.* two-lipped, five-cleft: *Caps.* one cell.

P. LUSITANICA. Nectary blunt, shorter than the petal: stalk hairy: capsule globular.

(*Hook. Fl. Lond.* 187. E.)—*E. Bot.* 145—*Lightf.* 6. 1.

Leaves semi-pellucid, marked with purplish veins, the edges rolled in.

The *flowers* smaller, and with more of a reddish cast than in *P. vulgaris*.

Ray. Whole *plant* rather pubescent. We are indebted to Smith for dissipating the doubts which had been entertained respecting this plant.

It had been referred to *P. villosa* and *alpina*, but living plants sent by Dr. Pulteney enabled him to decide it to be *P. lusitanica* of Linnaeus.

Bloss. segments equal, lilac-coloured, (throat yellow. *Flower-stalk* three or four inches high, clothed below with viscid hairs. According to Mr. Drummond, the leaves remain during winter. E.)

PALE BUTTERWORT. Marshes in Dorsetshire, Hampshire, Devonshire, and Cornwall, frequent. Hudson. (Still more abundant in the north-west of Scotland. E.) Near Ayr, and Island of Lamlash, Scotland. Dr. Hope. About Kilkampton: Midway from Oakampton to Launceston, betwixt a great wood and the river, in boggy meadows. Ray. Lewesdon Hill, Dorsetshire. Mr. Baker; more common in that county than *P. vulgaris*. (In a bog half way between Newton Linwady and Londonderry, by the road side. Mr. Brown. Marshes on Alderbury Common, Wiltshire. Dr. Maton, in Bot. Guide. In a little swamp on Maiden Down, opposite the Maidenhead Inn, Somersetshire. Mr. Sole, ditto. Frequent in Hampshire. E.) P. June—July.

P. VULGARIS. Nectary cylindrical, acute, as long as the petal: capsule egg-shaped.

Dicks. h. s.—(*Hook. Fl. Lond.* 104. E.)—*E. Bot.* 70—*Fl. Dan.* 93—*Clus. i.* 310. 2—*Ger. Em.* 788. 2—*Ger.* 644—*J. B.* iii. 546. 1—*Park.* 532. 2—*H. Ox. v.* 7. 13.

(*Plant* about five inches high. *Scape* single-flowered. E.) *Leaves* covered with soft upright prickles, secreting a glutinous liquor, (thick, not veined. E.) *Bloss.* drooping, violet, purple and reddish, with white lips, and an ash-coloured woolly spot on the palate.

COMMON BUTTERWORT. YORKSHIRE SANICLE. (Scotch: *Karning Grass*. Irish: *Bodan Measgar*. Welsh: *Toddaidd melyn cuffedrin*. Gaelic: *Broganna-cu'ais*. *Moan*. E.) On bogs. Broadmoor, three miles S.W. of Birmingham. Mr. Brunton. On the N.W. side of Malvern Hills, but not on the S. or S. E. side. Mr. Ballard. (Crosby Marsh, near Liverpool, Dr. Bostock. Boggy ground in Norfolk and Suffolk, frequent. Mr. Woodward. On bogs in Purbeck; on the heaths near Poole and Wareham, but rare. Pulteney. Anglesey. Welsh Bot. On the right hand side of the road leading over the moors from Whitby to Gisborough, about five miles from the latter place. Dr. Hull records a variety, which he observed on the right hand side of the road from Buxton to Disley, three miles from the former place, in Autumr, with "leaves lanceolate, dense, in length more than four times greater than their breadth." E.) P. May.†

(* *Pinguis*, fat; from its effect in coagulating milk. E.)

† If the fresh-gathered leaves be put into the strainer through which warm milk from the rein-deer is poured, and the milk is set by for a day or two to become uescent, it acquires consistence and tenacity; the whey does not separate, nor does the

(*P. GRANDIFLO'RA*. Nectary cylindrical, pointed, as long as the petal: upper lip roundly lobed: lower reticulated: capsule egg-shaped.

Hook. Fl. Lond. 128—*E. Bot.* 2184.

Leaves nearly twice as large as those of *P. vulgaris*, more veiny and yellow. *Flower-stalks* from six to nine inches high, more viscous and stronger. *Calyx* more obtuse. *Blossom*. reticulated all over with dark blue veins, and twice as large as in *P. vulgaris*. It loses all its leaves and forms into little scaly bulbs in winter, (as indeed does *P. vulgaris*, to which it is altogether similar. *Fl. Lond. E.*) *P. lusitanica* keeps its leaves all winter. *P. vulgaris* is not found where this species was discovered. *E. Bot.*

LARGE-FLOWERED BUTTERWORT. This beautifully large and novel *Pinguicula* has been found growing plentifully in marshy ground in the W. part of the county of Cork, by Mr. Drummond, Curator of the Botanic Garden at Cork. *P. May. E.*

UTRICULARIA.* *Bloss.* gaping, terminating in a spur: *Cal.* two leaves, equal: *Caps.* one cell.

U. VULGARIS. Nectary conical; stalk with few flowers; (upper lip of the blossom the length of the projecting palate. *E.*)

E. Bot. 253—*Fl. Dan.* 138—*Rin.* 79—*Pet.* 36. 11—*Ger. Em.* 828. 5—*J. B. iii.* 783. 3—*Park.* 1258. 9—*Schmid.* 21. 12. at the bottom.

(*Stems* prostrate in the water. *Scape* upright, five or six inches high, bearing six to eight flowers. *E.*) *Calyx* permanent; its lower leaf very slightly notched at the end. *Bloss.* full yellow; with purplish red streaks. *Nectary* blunt, lined with minute, shining, globular glands. *Filaments* thick, fleshy, crooked; fixed to the base of the germen. *Summit* two lips; one very small; the other broad, flat, thin, fringed at the edge. After the impregnation of the germen, this larger lip closes the aperture of the style. *Stalk* cylindrical, scaly towards the top, and dividing into three. *Leaves* in whorls; thread-shaped, greatly branched and forked; set with minute whitish harmless thorns, and hollow vesicles, which have a glandular appearance; they contain a transparent watery fluid, and a small bulb of air, (enabling them to give buoyancy to the parts to which they are attached. *E.*) They are pear-shaped; but rather compressed; with an open border at the small end, from the

cream; in this state it is an extremely grateful food, and as such is used by the inhabitants in the north of Sweden. There is no further occasion to have recourse to the leaves, for half a spoonful of this prepared milk, mixed with fresh warm milk, will convert it to its own nature; and this again will change another quality of fresh milk, and so on without end. *Linn.*—This did not succeed when tried with cow's milk. *Mr. Hawkes.* The juice of the leave kills lice; it is used to cure cracks or chops in cows' udders, (whence the name it has obtained in Yorkshire. *E.*) The plant is generally supposed injurious to sheep; occasioning a disease which the farmers call the Rot. But it may be questionable whether the Rot in sheep is so much owing to the vegetables in marshy grounds, as to a flat insect called a fluke (*Fasciola hepatica*), which is found in these wet situations adhering to the stones and plants, and likewise in the livers and biliary ducts of sheep that are affected with the Rot.—From experiments conducted with accuracy, it appears, that neither sheep, cows, horses, goats, nor swine, feed upon this plant. (The Welsh prepare a cathartic soup from this herb. *Parkinson. E.*)

* (*Utricularia*, a little bladder; some such, of a glandular appearance, being appended to this plant. *E.*)

edges of which arise three or four very slender fibres, which possibly may be the real roots of the plant. This fluid, when greatly magnified, appears to contain a quantity of extremely minute solid particles.

HOODED WATER-MILFOIL. GREAT BLADDERWORT. (Irish: *Fliugh iúige*. Welsh: *Chwysigenuraidd cyffredin*. E.) Wet ditches and stagnant waters. Ancot pool, near Salop. Mr. Aikin. In shallow waters on Birmingham Heath, (now drained.) Near Bootle, between Crosby and Formby, near Liverpool. Dr. Bostock. Boggy ground, in Norfolk and Suffolk, not unfrequent. Mr. Woodward. At Hell Kettles, and Polam, near Darlington. Mr. J. Backhouse, jun. Winch Guide. Anglesey, Welsh Bot. Between Bainton and Burford, Oxfordshire. Rev. W. Rufford. Purton. Between Rosmorran and Kenegie, Cornwall. Dr. Forbes. In pits to the left of the road half a mile beyond King's Teign-ton, leading towards Newton, Devon. E.) P. July.

(*U. INTERMEDIA*. Nectary conical; upper lip twice as long as the palate; leaves crowded in three deep-forked segments.

E. Bot. 2489. — *Fl. Dan.* 1261.

Smaller than *U. Vulgaris*. Bloss. of a paler yellow; only half the size; has a longer upper lip. Leaves fringed. Vesicles detached on branched stalks. Plant propagating itself by dense, green, terminal buds. Hayne. Sp. Hook.

INTERMEDIATE BLADDERWORT. Irish: *Linaneagh*. *U. intermedia*. Hayne. In ditches and pools, rare. In a ditch by the side of Rescalin Lakes four miles E. of Forfar. Mr. D. Don. For English stations and specimens we are indebted to Mr. Winch, who has found this rare plant about Prestwick Carr, Northumberland, intermixed with *U. vulgaris*; also in a ditch at the foot of Derwentwater. In Ireland it has been found in a bog on the top of a hill about two miles from Dumanway, on the road to Bantry. P. July. E.)

U. MINOR. Nectary keel-shaped, (deflexed, short, blunt. E.)

Schmid. 21 — *E. Bot.* 251 — *Fl. Dan.* 128 — *Pluk.* 99. 6 — *Pct.* 36. 12.

Nectary indistinct; pointing downwards. Mouth of the blossom open, gaping; without a prominent palate. Roots hair-like, very slender, buoyant; beset with small membranous bladders. Stalk as long as a finger, simple, very slender; dividing toward the top into three fruit-stalks, with three floral leaves. Root-leaves winged, hair-like; little leaves few; equal. Cal. with the lower leaves reflexed. Bloss. two petals; gaping. Upper-lip horizontal, heart-shaped, perforated at the base, fixed to the receptacle. Lower-lip larger, heart-shaped, reflexed at the sides; gibbous at the base on the under side, prominent and keel-shaped. Germen egg-shaped. Style simple, short. Summit between egg and tongue-shaped. Bloss. a paler yellow than in the preceding species. Linn. (About half as large as those of *U. intermedia*; five or six in number; palate not closing the mouth, equal in length to the upper-lip. E.)

SMALL BLADDERWORT. (Welsh: *Chwysigenuraidd lleaif*. E.) Ditches and muddy ponds, rare. Common on bogs in Suffolk. St. Faith's Bogs, near Norwich. Mr. Pitchford. Ditches adjoining Outerthwaite, near Blackburn in Cartmel, with *U. vulgaris*. Mr. Jackson. (Chartley Moss and Norton Bog, Staffordshire. Mr. Bagot. Bogs in Scotland and Ireland. Mr. Brown. Sparingly near Bootle and Little Crosby, near Liverpool. Dr. Bostock. Roydon Fen, near Diss, in Norfolk. Mr. Woodward. Bogs at Ampthill; Potton Marshes, Bedfordshire. Abbot.

Hinton Moor, on the edge next the corn-fields; Gamlingay quaking bogs, Cambridgeshire. Relhan. In a bog near the three mile stone between Wimbourne and Poole. Pulteney. Wet ditches near Rid, Yorkshire. Rev. Archdeacon Pierson, in Bot. Guide. Wixhall Moss, Shropshire. Mr. A. Aikin, ditto. Anglesey, in a turbary between Tyfry and Hendref. Welsh Bot. Peat-pits, Ravelrig-toll. Grev. Edin. E.) P. June—July.*

LYCOPUS.† Bloss. four-cleft; (nearly equal. E.) one segment notched at the end: Stamens distant: Seeds four, blunt.

L. EUROPE'US. Leaves deeply indented and serrated.

Curt. 201—Fl. Dan. 1081—(E. Bot. 1105. E.)—Kniph. 5—Riv. 22. Pseud-marr. pal.—Mutth. 1002—Dod. 595. 2—Lob. Obs. 283. 2—Ger. Em. 700. 1—Park. 1230. 1—Pet. 32. 5—H. Ox. xi. 9. 20—Trag. 9. 2—J. B. iii. 318. 2.

Cal. with four or five clefts; segments unequal. Bloss. whitish, with a tinge of purple; somewhat hairy within; upper segment slightly notched at the end; lower one with a few purplish spots on the inside. Betwixt the two stamens it is not uncommon to find two other shorter filaments without anthers; and I once found them with anthers. Germen upon a yellow glandular receptacle. Stem (two feet high, E.) with four angles and four hollow sides; rather hairy. Branches opposite, rising from the bosom of the leaves. Leaves a little hairy, (opposite, nearly sessile, large, egg-spear-shaped. E.) Flowers several together in the bosom of the upper leaves.

Var. 1. *Laciniatus*. Jagged. Leaves deeply divided.

Barr. 154—H. Ox. xi. 9. 21—Pluk. 45. 1.

WATER HOREHOUND. COMMON GYPSY-WORT. (Irish: *Eochran Curroigh*. Welsh: *Llys yr hudolesau cyffredin*. E.) Sandy ground on the banks of streams and ponds. P. July—Sept.†

SALVIA.§ Bloss. gaping: Filaments attached transversely to a little foot-stalk.

* (M. Hayne, of Berlin, has made the observation that the vesicles at the roots of each of these species consist of a transparent, tough, horny, and elastic membrane, and are furnished with an aperture, closed by a lid that only opens outwardly. Before the flowers appear the vesicles are filled with water; but when the plant brings forth the scape, and approaches the time of flowering, the water disappears, and, instead of it, air is secreted in them, by which means the plant rises to the surface of the water; so that the flowers may unfold in open air. But when the time of flowering is over, and the seeds are arrived at perfection, the vesicles again fill with the former fluid, and the plant sinks to the bottom. Annals ii. E.)

† *Lupus*, a wolf, and *pes*, a foot. E.)

‡ It dyes black. The juice gives a permanent colour to linen, wool, and silk, which will not wash out. (It is called *Gypsy-herb*, because, as Thæckeldd quaintly reminds us, "those strolling cheats called gypsies do die themselves of a blackish hue with the juice of this plant, the better to pass for Africans by their tanned looks and swarthy hides, to bubble the credulous and ignorant by the practice of magic and fortune telling, they being indeed a sink of all nations, living by rapine, filching, pilfering, and imposition." E.) Sheep and goats eat it; cows and horses refuse it. *Cassida viridis* feeds upon it.

§ *Salvere*, to preserve; from its healing qualities:

"Cur moriatur homo cui *Salvia* crescit in horto?"

according to the school of Salerno. E.)

S. PRATEN'SIS. Leaves heart-oblong; scolloped: upper leaves embracing the stem: flowers in whorls with hardly any intermixture of leaves.

E. Bot. 153—*Fuch.* 569—*Trag.* 53—*Dod.* 293. 1—*Ger. Em.* 769. 3—*Riv.* 36—*Kniph.* 5—*Ger.* 627. 3—*H. Ox.* xi. 13. 10—*Clus.* ii. 30. 1—*Ger. Em.* 771. 4—*J. B.* iii. 312. 2.

(Two or three feet high. E.) *Floral leaves* about the length of the calyx. *Cal.* spread open. *Bloss.* bluish purple, four times as large as the calyx; helmet hooked, sometimes glutinous.

MEADOW SAGE, or CLARY. (Welsh: *Gwerddonell y waun.* E.) Meadows and pastures. Surry and Sussex, common. Stokes. Wick-cliffs, Gloucestershire. Rev. G. Swayne. (Near Llanidan, Anglesey. Bingley. Limestone meadows about Port Eynon, Glamorganshire. Dr. Turton. In Kingsthorp Church-yard, Northamptonshire, abundant. Moreton. Dry pastures between Middleton Stoney, and Audley, Oxfordshire. Sibthorpe. In a pasture near Ford-end Farm, Bedfordshire. Rev. T. O. Marsh, in *Bot. Guide.* E.) P. June—July.

S. VERBENA'CA. Leaves indented, serrated, rather smooth: blossom more slender than the calyx.

(*Curt.* E.) *E. Bot.* 154—*Clus.* ii. 31. 1—*Ger. Em.* 771. 1—*Park.* 57. 8—*Blackw.* 258—*Barr.* 208—*H. Ox.* xi. 14. 33.

(One to two feet high, aromatic. *Leaves* greyish green, rugose, veined, the lower ones stalked.) *Floral leaves* longer than the calyx. *Cal.* much wider than the tube of the blossom, but its segments not expanded and spread open. *Bloss.* not twice the length of the calyx; blue; comparatively small. E.)

WILD ENGLISH CLARY. (Welsh: *Torfagl; Golwg. Crist.* E.) Meadows and pastures. Kegworth Church-yard, Leicestershire, and about Chester. Mr. Caley. About Kinfare, Staffordshire, plentiful. Mr. Brunton.—On the Castle hill, Tamworth. (Lime rocks about Garn, Denbighshire. Mr. Griffith. On the ramparts about Wareham. Corfe Castle, and in Purbeck; common in Portland; Castle hill at Shaftesbury; in Langton Church-yard. Pultovey. On the banks below Tynemouth Castle; Ballast-hills, below Gateshead. Mr. Winch. Near the Priory at Penmon, Anglesey. Welsh Bot.—Salisbury Crags, Edinburgh. Lightfoot.—Bidford and Haslor, near the churches, Warwickshire. By the side of the road at Ilarvington, leading to the mill, Worcestershire. Purton.—Stratford Church-yard. Perry. E.) P. June.*

ORCHIS.† *Nectary* resembling a horn, behind the flower: *Bloss.* gaping.

(1) *Bulbs of the root undivided.*

O. BIFOLIA. Lip of the nectary spear-shaped; very entire: horn very long: (twice the length of the ~~germen~~, E.) petals expanding.

* The seeds soaked in water for a few minutes exhibit a dense mucilaginous coating, not unlike frog-spawn, (which has been considered serviceable in obtaining or removing adventitious particles from the eyes, whence (by contraction) the English name. E.) Those of *Q. pratensis* have the same property, but in a less degree.

† (From *opsis*; in reference to the shape of the root, most species being bulbous. E.)

Dicks. H. S.—(*Curt. E.*) *E. Bot.* 22—*Ludw.* 95.—*Hall.* 35. 2, at ii. p. 148—*Kniph.* 6—*Walc.*—*Dod.* 237. 2—*Lob. Obs.* 88. 2, ic. i. 178. 1—*Ger. Em.* 211. 2—*Park.* 1351. 7—*Pet.* 68. 11—*Ger.* 165. 9—*H. Or.* xii. 12. 18—*J. B.* ii. 771—*Matth.* 880. 2—*Fl. Dan.* 235—*Blackw.* 588—*Flowers only, Vaill.* 30. 7—*Seguier,* 15. 10.

(*Stem* twelve to eighteen inches high, ribbed; with two large radical *leaves*, attenuated at the base; and three or four cauline ones, small spear-shaped. *Flowers* numerous, yellowish white, in an oblong spike, fragrant, especially in an evening. *E.*) *Leaves* shining underneath, as if varnished.

BUTTERFLY ORCHIS. (Welsh: *Tegeirian dwyddalenau*g. *Habenaria bifolia*. Br. Hook. Moist meadows, pastures, and marshy places. On mountains frequent. Pentland Hills, Edinburgh. Greville. *E.*) Shotover Hill and Tarwood, Oxfordshire. Sibthorpe. (Very common in mountainous pastures in North Wales. Mr. Griffith. Woods between Longridge and Shepscombe, Painswick. Mr. O. Roberts. Nqrberry Park, Surry. Castle Eden Dean, Durham. Mr. Winch. Downs near Mullian, Cornwall. Rev. J. P. Jones. In a plantation near the Saltsford Common, Warwick. Perry. *E.*) P. May—June.

Var. 1. Leaves exactly oval.

There does not seem to be any figure of this variety. Plant full two feet high; leaves either two or three, six inches long and three wide.

Shotwood, near Pucklechurch. Rev. G. Swayne. Woods and shady lanes, Leicestershire, common. Pulteney. Woods at Envil, Staffordshire.

Two other varieties have been noticed by Ray, which may be thus characterized.

Var. 2. Leaves two, egg-spear-shaped.

J. B. ii. 772—*Park.* 1350—*Ger.* 162—*Ger. Em.* 211. 1—*Lob. Ic.* 178. 2.

These references are given by Ray, who remarks, that the flowers are few, white, thinly set, extremely fragrant; lip narrow; spur very long; leaves two, broad, like those of lilies.

Var. 3. Leaves two or three, spear-shaped.

J. B. ii. 771. with three leaves—*Park.* 1351—*Ger. Em.* 211. 2 *Lob. Ic.* 178. 1.

Such are the references of Ray, who also says, that it is a lower plant than the preceding, not above nine inches high; that the root-leaves are three in number, narrower than in Var. 2; that it is found in pastures, and flowers a month later.

I have now before me several specimens gathered in June in the New Forest near the Monument of Rufus, which agree with Var. 2, and amongst them is one with three leaves, and another with four, acutely spear-shaped, and only seven inches high. The greenish white colour of the blossoms, and the great length of the horn, sufficiently distinguish this from all other British species.

O. PYRAMIDALIS. Lip of the nectary bicornate, three-cleft: segments equal; very entire: horn long: petals somewhat spear-shaped.

(*Hook. Fl. Lond.* 106. *E.*)—*Jacq. Austr.* 266—*Ray*, 18. at p. 377—*Hall.* 35. 1. at ii. p. 148—*E. Bot.* 110—*Pet.* 68. 4—*J. B.* ii. 764. 1—*Clus.* i. 269. 1—*Ger. Em.* 210. 4—*Park.* 1349. 4—*Flowers only, Vaill.* 31. 38.

Stem nine to twelve inches high, jointed. *Leaves* five or six; spear-shaped, acute, membranous. *Floral leaves* spear-shaped, coloured, as long as the germen. *Flowers* purple. *Petals* egg-spear-shaped, three approaching, the two lateral ones expanding, reflexed. *Lip* broad, with two oblong longitudinal protuberances at the base. Linn. *Spike* short, compact, pyramidal; *horn* filiform, longer than the germen. *Stem and leaves* of a silky glossiness; *leaves* strap-spear-shaped, (pale. E.) The gibbous protuberances on the lip of the nectary give, as remarked by Smith, the distinguishing character of this species.

PYRAMIDAL ORCHIS. (Welsh: *Tegeirian hera*; *Tegeirian côchyr hâf*. E.) Meadows and pastures, especially in calcareous soil. (Rare in Scotland. Near Triloran, in the isle of Colonsay. Lightfoot. About Stockingwood, Leicestershire, rare. Pulteney. Road sides in the northern parts of Northamptonshire. Mr. Pitt. Fields near Houghton-le-Spring, and Castle Eden, Durham. Mr. Winch. Ragley Park, opposite Kingley; Cleve Hill; and Grafton, Warwickshire. Purton. Tywyn y Capal, Holyhead. Welsh Bot. E.) P. June—July.

Var. 2. *Fl. alb.* Flowers white. Chalk-pit Close. Relhan. (And on Borden Hill, Hampshire. Pulteney.

Mr. D. Stock, of Bungay, has observed this plant with flowers destitute of spur and lip; each flower had a calyx of three coloured leaves, and three petals, all quite uniform; the organs of fructification being placed in the centre. Mag. Nat. Hist. i. 379. E.)

O. MORIO. (Knobs of the root oval: lip of the nectary four-cleft, somewhat crenate; spur obtuse, ascending; calyx (petals) many-ribbed, converging. Sm. E.)

Curt.—(E. Bot. 2059. E.)—*Walc.*—*Dod.* 286. 2—*Lob. Obs.* 88. i.; *Id.* i. 176. 2.—*Ger. Em.* 208. 2—*Park.* 1347. 4—*Ger.* 158. 6—*Fuch.* 559—*J. B.* ii. 761. 3. *Lonic.* i. 202. 1—*Hall.* 33. 2, at ii. p. 144—*Fl. Dan.* 253—*Vaill.* 31. 13. and 14, *flowers only.*

(*Stem* six to twelve inches high. *Leaves* paler, and silvery or shining beneath, spear-shaped, embracing the stem. E.) *Flowers* purple, rather few. *Petals* all obtuse, marked with approximating lines. *Flowers* six to twelve, loosely disposed. *Horn* shorter than the germen. *Lip* of the nectary very broad, the middle segment spotted with purple. *Leaves* sometimes spotted. Stackh. Differs from *O. mascula* as follows: *Stem* lower. *Spike* of fewer flowers. *Bulbs* small, round, one fixed to the base of the stem, the other connected by a fibre the thickness of a pack-thread, and half an inch long. *Petals*, the three upper forming the hood, and covering the lower ones, always scored with three or five greenish veins. Woodw. The green lines on the petals distinguish it from every other *Orchis*. Ray. (The masses of pollen, formerly taken for anthers, split each into two lobes. Sm. E.)

Var. 1. Flowers flesh-coloured, or white. Ray.

Nuns, about Nottingham.

MEADOW ORCHIS. (Welsh: *Tegeirian y waun*. E.) Moist meadows and pastures. P. May—June.*

O. MAS'CU'LA. Lip of the nectary four-lobed, finely scalloped; horn obtuse: exterior petals reflexed.

* (This is one species from which the roots are obtained for making the beverage called Salcep, or Saloop.

(*Dicks. H. S.—E. Bot. 631. E.*)—*Curt. 121—Hall. 33. 1. at ii. p. 144—Kniph. 7—Woodw. 90—Fl. Dan. 457—Sheldr. 16—Dod. 236. 1—Lbb. Obs. 87. 3; Ic. i. 176. 1—Ger. Em. 208. 1—Park. 1346. 1—Walc.—Blackw. 53—Fuch. 555—J. B. ii. 763. 1—Lonic. 1. 201. 1—Matth. 882—Ger. 158. 5—Flowers only, Vaill. 31. 12 and 11.*

Very closely allied to *O. morio*, but differing as follows: *Stem* twice as tall. *Flowers* numerous. The two *petals* on the back not approaching to a helmet form. The middle lobe of the *lip* smallest. *Linn. Bulbs* oval, both fixed to the base of the stem. *Stem* twelve to fifteen inches high. *Leaves* spear-shaped, bright green and shining above, sea green underneath, with longitudinal parallel veins, usually with large purplish brown spots. *Floral leaves* longer than the germen. *Flowers* of a darker or paler purple, rarely white. *Petals*, the two lateral ones upright, and bent back to back, the middle ones expanding and lying over the two lower ones, which are closely approaching, and of a paler colour. *Lip* of the *nectary* dotted towards the base, broad, with three lobes, the side ones roundish, scolloped, the middle ones notched at the end. *Horn* as long as the germen, broadest and somewhat compressed at the end. *Woodw.* (Masses of *pollen* yellow, undivided. *Sm. E.*)

EARLY SPOTTED ORCHIS. (Welsh: *Hosnau'rgog; Tegeirion côch y gwanwyn. E.*) Meadows and pastures. P. May.*

O. USTULA'TA. Lip of the nectary four-cleft, rough with prominent points: horn obtuse, (very short. *E.*); petals distinct, (leaves lanceolate. *E.*)

Dicks. H. S.—(Hook. Fl. Lond. E.)—Hall. 28. 2. at ii. p. 140—E. Bot. 18—Fl. Dan. 103—Clus. i. 268. 1—Ger. Em. 207—Park. 1345—J. B. ii.

* Mr. Moulton, in a letter to Dr. Percival, inserted in *Phil. Tr. lix.* describes his method of making Salep. The best time to gather the roots, he observes, is when the seed is formed, and the stalk going to fall: for then the new bulb, of which Salep is made, is arrived at its full size. The new roots being separated from the stalk, are to be washed in water, and the outer thin skin taken off. They are then to be set on a tin plate, in an oven heated to the degree of a bread oven. In six, eight, or ten minutes, they will have acquired a transparency like horn, without being diminished in size. They are then to be removed into another room to dry and harden, which will be done in a few days; or they may be finished in a very slow heat in a few hours.—Salep thus prepared may be sold for less than a shilling a pound, and affords a mild and wholesome nutriment, superior to rice, which in times of scarcity, in cases of dysentery and strangury, and on ship-board, may be extremely useful. See Percival's Essays, part ii. p. 37. — Mr. Moulton made his experiments upon the roots of this species only. The preceding species is equally proper for the purpose, and it is highly probable that every species of Orchis may be used indiscriminately. Salep has been hitherto imported from Turkey at a considerable price, but it is to be hoped we shall no longer be provided from foreign markets, with an article that our country can supply in almost any quantity. If ever plantations of it are made, the plants must be propagated by roots, for the seeds seldom come to perfection. (Mr. Salisbury, in a communication to the Linn. Soc. (further noticed in our vol. i. p. 123) assures us that he finds no difficulty in raising plants from the seeds of many species of Orchideæ, among which *O. mascula* is particularly named, in his conservatory: and Mr. Hunter, Nurseryman, near Birmingham, has also succeeded in propagating plants of this tribe from seeds sown in a stove. The spikes of these flowers are supposed to be the "Long-Purple" or "Dead-men's Fingers," of the gentle Ophelia's garland, previous to her mournful exit.

"There with fantastic garlands did she come,

"Of Crow-flowers, Nettles, Daisies, and Long-Purples."

Though some have imagined the term thus introduced by the bard of Avon rather to have referred to the Cuckoo-pint, sometimes called "Bloody-men's Fingers" in Worcestershire. (E.)

765. 2—*H. Ox.* xii. 12. 20—*Flowers only*, *Vaill.* 31. 35. and 36—*Seguier* 15. 4.

Stem angular, (seldom more than three or four inches high. *E.*) *Spike* compact, with nearly forty flowers. *Floral leaves* as long as the germen. *Horn* much shorter. *Petals* purplish without; greenish white within. *Relh.* *Leaves* five or six, spear-shaped. *Spike* egg-shaped, seldom an inch in length. *Lip* with three divisions, the two outer segments expanding, spear-shaped, entire, with one or two teeth, the middle one longer, widening at the end, with two short lobes and an intermediate point. *Woodw.* *Nectary*, middle segment of the lower lip always cloven, with or without a small projecting point in the cleft.

(A white-flowered var. has been sometimes observed. *E.*)

DWARF ORCHIS. Dry meadows and pastures. Gogmagog Hills, Newmarket Heath, and Barneck Heath, near Stamford. Woodward. On Wick Cliffs, and on the Wiltshire Downs. Rev. G. Swayne. On Salisbury Plain, particularly upon the barrows about Stonehenge. (Barton Hill, Luton Downs, Bedfordshire. Abbot. In Nutford Field, near Blandford. Pulteney. Sea banks at Ryhope; East side of Cleadon Hills, Durham. Mr. Thornhill and Mr. Waugh, in Bot. Guide. About Dover. Shouldham lime-kiln hill, Norfolk, but rare. Rev. R. Forby, ditto. Chalk bank, Risby Heath, Suffolk. Sir G. T. Cullum, ditto. Back of Juniper Hill, near Dorking. Mr. J. Woods, jun. ditto. At the Woodlands, near Bridgnorth. Hall, in Purton. *E.*) P. May—June.

O. MILITARIS. Lip of the nectary five-cleft; rough with dots: horn blunt: petals confluent.

Flowers in a spike, purplish or ash-coloured. *Petals* growing together. *Lip* three cleft; middle segment longest. *Spur* short, rather blunt. Linn. but half the length of the germen.

Var. 2. *Fusca.* Lip three cleft; middle segment very broad, notched at the end, and a little point in the notch.

Curt.—Jacq. Austr. 307—*E. Bot.* 16—*Ray* 19. 2. at p. 379—*Hall.* 31. at ii. p. 140—*Flowers only*, *Vaill.* 31. 27, 28—*Seguier* ii. 15. 2.

From eight to twelve inches high. *Spike* about three inches long. *Leaves* egg-spear shaped. *Bloss.* varying much in colour, of a pale rose red, with sometimes a greyish cast on the lip, and of a deeper purplish hue on the upper petals.

With a greenish cast. *Jacq. Ic.* *O. moravica.* *O. militaris purpurea.* Huds. Ed. ii. *O. fusca.* *Curt.*

BROAD-LIPPED MILITARY ORCHIS. *O. militaris* β. Linn. Fl. Brit. *Jacq. Austr.* (and latterly considered a distinct species by Smith. *E.*) On dry chalky soils, near woods and thickets. About Rochester, and near Northfleet. (Marlow Wood in plenty. Mr. Gotobed; and woods between High Wycombe and Great Marlow. Mr. J. Rayer, in Bot. Guide. Near the old chalk pit by the paper mill at Harefield, Middlesex, plentiful. Blackstone. P. May—June.

Var. 3. Lip three-cleft, segments strap-shaped.

(Easily known by the narrow segments of the lip, and acuminate petals. A delicate, smaller plant than the preceding, having a remarkably abrupt termination to the spike of flowers. Bicheno.

Hook. Fl. Lond. 82—*E. Bot.* 1873. *E.*)—*Hall.* 28. 1. at ii. p. 140—*Col. Ephrasi.* 320. 2.—*Ger. En.* 205. 2—*Park.* 1344—*Fuch.* 554—*J. B.* ii. 755—*Trag.* 778—*Flowers only*, *Vaill.* 31. 25 and 26.

NARROW-LIPPED MILITARY ORCHIS. (*O. militaris*. a. Fl. Brit. *O. tephros anthos*. Villars. Willd. Bicheno. Hook. Sm. Meadows and pastures in a chalky soil. Caversham Hills, by the Thames-side, not far from Reading. It is found at present on the rising ground among the bushes W. of the great chalk-pit facing the Thames; but of uncertain produce. Bicheno. E.) P. May.*

The greater or lesser breadth of the middle segment of the nectary, is the principal difference. (Smith remarks, that all the varieties, in drying, smell like new hay, and greatly vary and interchange with each other. E.)*

(2) *Bulbs of the root hand-shaped.*

O. LATIFOLIA. Bulbs somewhat hand-shaped, straight: horn of the nectary conical: lip with three lobes; the lateral ones reflexed: floral leaves longer than the flowers.

(About a foot in height. *Leaves* sheathing the stem nearly to the top, from half an inch to an inch and a half in breadth. *Bloss.* purple, or pale red, rarely white, in a rather dense spike. *Lip* spotted and streaked. Prof. Hooker observes that this species may always be known by its slightly-lobed *lip*; its broad, nearly erect, and acuminate *leaves*; and especially by the *bractees*, which are leafy and longer than the germens. E.) *Bulbs* divided into two or three fingers. Differs from *O. maculata* as follows: *Floral-leaves* longer than the flowers. *Leaves* nearly without spots. *Stem* hollow. Linn.

Var. 2. Linn. Middle segment of the lip blunt, as narrow again as the side ones, but of the same length.

Curt. 250—*Mill. Ill.*—*Fl. Dan.* 266—(*E. Bot.* 2308. E.)—*Hall.* 32. 2. at ii. 142—*Dod.* 240. 1—*Lob. Obs.* 90.* 3. *Ic. i.* 188. 1—*Ger. Em.* 220. 1—*Park.* 1356. 1—*Ger.* 169. 1—*J. B.* ii. 774. 1—*Blackw.* 405—*H. Or.* xii. 14. 2—*Flowers only*, *Vaill.* 31. 35. 4.

Bulbs cloven in two, each segment divided, and expanded. Spike oblong spear-shaped, one to two and a half inches long. St.

Var. 3. Linn. Middle segment of the lip egg-shaped, acuminate, as long again as the side ones.

Vaill. 31. 2 and 1—*Walc.*—*Dod.* 241—*Lob. Obs.* 91.* 3; *Ic. i.* 190. 1—*Ger. Em.* 222. 3—*Park.* 1358. 11—*Ger.* 171. 8—*Lob. Obs.* 98. 1. *Ic. i.* 191. 2—*Ger. Em.* 226. 1—*Ger.* 174. 2—*Flowers only*, *Vaill.* 31. 2 and 1—*Park.* 1360. 16.

In the same moist meadows with (1) between Battenhall and Worcester. Stokes.

BROAD-LEAVED HAND ORCHIS. MARSH PALMATE ORCHIS. (Welsh: *Tegeirian y gors*. E.) Moist meadows and pastures, and marshy ground, common. P. May—June.

O. MACULATA. Bulbs expanding: horn of the nectary shorter than the germen; lip, flat (three-lobed, crenate: E.) petals on the back upright.

(*Hook. Fl. Lond.* 112—*E. Bot.* 632. E.)—*Fl. Dan.* 933—*Hall.* 32. 1. at ii. p. 142—*Lonic. i.* 203. 2—*Dod.* 240. 2—*Lob. Obs.* 90.* 4; *Ic. i.* 188. 2—

* (See an attempt to elucidate these intricate varieties by Mr. Bicheno, in *Linn. Tr.* xii. E.)

Ger. Em. 220. 2—*Park.* 1357. 3—*Trag.* 781—*Ger.* 169. 2—*J. B.* ii. 775. 2—*Lob. Obs.* 91.* 1. *Ic.* i. 189. 1—*Ger. Em.* 222. 1—*H. Ox.* 12. 14. row 2. 5—*Flowers only*, *Vaill.* 31. 9 and 10.

One of the *bulbs* floats in water, this nourishes the stem; the other sinks and bears the bud for the ensuing year. *Linn. Stem* solid. *Leaves* spotted. *Floral-leaves* not longer than the flowers. *Petals*, the three outer upright, the two inner approaching. *Spikes* compact, conical. *Flowers* nearly forty, pale purple, with deeper lines. *Relh. Bulbs* compressed; fingers wide apart. *Stem* six to eighteen inches high, cylindrical below, angular above. *Leaves* underneath silvery grey, with parallel green veins, above pale green, often partially covered with the same silvery cuticle; spots reddish brown, numerous, mostly oval and transverse, sometimes irregular, the edges of the upper ones decurrent, whence the angular appearance of the upper part of the stem in this and several other species. *Flowers* sometimes nearly white, and without spots, when the leaves also are pale, and spotless. *Lip* deeply cloven into three, marked with purple spots and lines; the lateral segments angular, the middle one spear-shaped. *Horn* bluntish. Differs from *O. latifolia*, in the lowermost leaf being always very blunt, the lip being deeply cloven into three, and in flowering later. *Woodw. Floral-leaves*, the lower longer than the flowers, the upper shorter. *St. O. mascula*, and *O. morio*, having often spotted leaves, have sometimes been mistaken for this species. (*Stem* solid, and far more slender than in *O. latifolia*; *bractæ* as short as, or perhaps even shorter than, the germen. *Hook. E.*)

SPOTTED HAND ORCHIS. (Welsh: *Tegeirian manog byseddog*. Gaelic: *An úrach-bhallach*. E.) Woods, rich meadows, when the spike is large, and a hand's breadth long; in barren pastures, the spike is only half that size, and has fewer flowers. *Ray.* (P. June—July. E.)

Var. 2. Leaves not spotted.

Auchandenny Woods, Scotland. *Parsons*, in *Fl. Scot.* 518.

O. CONOP'SEA. Horn of the nectary bristle-shaped, twice as long as the germen; lip in three entire segments; two of the petals much expanding.

Dicks. H. S.—(*Hook. Fl. Lond.* 186. E.)—*Fl. Dan.* 224—*E. Bot.* 10—*Hall.* 29. 2. at ii. 47—*Vaill.* 30. 8 and 8—*Fuch.* 712—*J. B.* ii. 778. 1—*Lob. Obs.* 91.* 2. *Ic.* i. 189. 2—*Ger. Em.* 223. 2—*Park.* 1358. 5—*H. Ox.* xh. 14. 14—*Ger.* 171. 2—*Flowers only*, *Vaill.* 30. 8 and 8.

Stem twelve to eighteen inches high; cylindrical below, angular above. *Leaves* spear-shaped, strap-pointed, acuminate; bright green, keeled, with a strong mid-rib, on each side of which is one strong rib, and two or three fainter veins; lower stem-leaves embracing the stem: the upper sessile, decreasing in size till they resemble the floral-leaves. *Floral-leaves* spear-shaped, acute, longer than the germen. *Spike* long, loose, sometimes more crowded with flowers. E.) *Flowers* flesh-coloured, or pale purple, very fragrant. *Petals*, the middlemost of the outer and the two inner ones closely approaching, their points bent inwards, and covering the stamens; the two outer spear-shaped, at right angles with the lip of the flectay. *Spur* slender, semi-transparent. *Woodw.* (*Lip* not spotted.—The two-cells of the anthers are perforated at the base, through which the naked, large, and oblong glands of the stalks of the pollen-mass appear. *Hook. E.*) The great length of the flexuous horn of the nectary, so strikingly remarkable, is sufficient to distinguish it from every other species in this subdivision.

(Dr. Pulteney found a variety bearing *white flowers* on Bordeau Hill, Hampshire. E.)

RED HAND OF AROMATIC ORCHIS. (Welsh: *Tegcirian peraroglaidd*. *Gymnadenia conopsea*. Br. Hook. E.) Meadows, pastures, (and heathy bogs. E.) In a morass near Leeds. Mr. Woodward. Knutsford Moor, Cheshire. Mr. Aikin. Pastures under Shortwood near Pucklechurch, Gloucestershire, and on the Wiltshire Downs. Mr. Swayne. Dry pastures near Auchenny, seven miles from Edinburgh, and abundantly on the hilly grounds north of the river Leven, Dumbartonshire. Dr. Hope. (Pope's Wood; beyond the Roman encampment, Spoonbed Hill, Painswick. Mr. O. Roberts. In Castle Eden Dean, Durham. Mr. Winch. E.)

P. June—Aug.

(The plant hitherto noticed on the authority of Ray, (*Limodorum austriacum*, Syn. 383.) usually referred to *O. abortiva*, with violet-coloured flowers, and lip of the nectary very entire, though in general habit bearing a strong resemblance to *Ophrys hidus-avis*, and said to have been found by Goodyer near Alton in Hampshire, has little or no pretension to continue in a British Flora. E.)

SATYRIUM.* *Nectary* behind the flower; inflated, globose.

S. HIRCEINUM. Bulbs undivided: leaves spear-shaped: lip of the nectary three-cleft, (downy. E.) middle segment strap-shaped, twisted, (very long, emarginate. E.)

(Hook. Fl. Lond. 96. E.)—Jacq. Austr. 367—Hall. at ii. 136—E. Bot. 34—Dod. 237. 1—Ger. Em. 210. 1—Park. 1348. 1—Ger. 160. 1—H. Or. xii. 12. 9—Lob. Obs. 90. 1. Ic. i. 177. 1—Ger. Eux. 210. 2—Park. 1348. 2—J. B. ii. 756—Ger. 160. 2—Flowers only; Vail. 30. 6. and Segur 15. 1.

(Plant eighteen inches to two feet high. E. *Flowers* smelling like a goat. Linn. whence the specific name is derived. E.) Especially fetid when confined in a box. The largest and tallest of our *Orchises*. Ray. *Flowers* greenish white, purple within. (*Lip* pendent, brownish purple. *Lateral segments* very short, awl-shaped, entire. *Spike of flowers* six to eight inches long. E.) (By the time the inflorescence is perfected, the lower part of the stem and foliage wither and decay, and the whole plant is liable to be overlooked. In moist seasons the colours of the flower are pallid, in hot and dry summers, more vivid. The flower has occasionally a double lip, and I once found an individual with a double spike of blossoms. Graves. E.)

LIZARD FLOWER; (From the fancied resemblance of the *labellum* to a lizard; more striking when the flower is deprived of its outer petals. Fl. Lond. E.) or **SATYRIUM.** (*S. hircinum*. Linn. *Orchis hircina*. Willd. Br. Hook. Sm. E.) (A rare and singular plant first noticed in Britain by Mr. Bowles, between Crayford and Dartford, according to Ray. E.) Chalky meadows and pastures. In shaly pastures by the side of Darent Wood, two miles from Dartford; and in Halsey Wood pits, near Dartford Heath. Mr. J. Woods, jun. in Bot. Guide. At the bottom of Clifton Hill; also in Colnwick Wood, Nottinghamshire. Deering.

* (Named after certain wood demons, by whom it was adopted for supposed spirodisiac qualities. E.)

Néver found about Keswick, as reported; a primitive country, which does not produce limestone, and chalk plants. Mr. Winch. E.)

P. June—July.

S. VIRIDE. Bulbs hand-shaped: lower leaves oblong, blunt: lip of the nectary strap-shaped, three-cleft; the middle segment obscure: (spur very short. E.)

Dicks. *H. S.*—(*Hook. Fl. Lond.* 130. E.)—*E. Bot.* 94.—*Hall.* 26. 2, at ii. p. 137—*Fl. Dan.* 77—*Ger. Em.* 224. 9—*Park.* 1358. 9.

Flowers pale green, (rather few, in a lax spike. *Petals* approaching, forming a helmet. E.) *Stem* five to eleven inches high, solid; angles unequal, acute. *Floral-leaves* awl-spear-shaped, keeled, (somewhat incurved, half as long again as the flowers. E.) *Calyx*, tube investing the germen; border with three divisions; segments egg-shaped, nearly equal, with sharp longitudinal lines approaching upwards, before flowering cemented together, and involving all the parts of fructification, except the nectary; the side ones more convex on the outside, recurved sideways at the points, the middlemost rather smaller, more bent inwards. These, which are clearly an extension of the skin investing the germen, inclose as a calyx the other parts of fructification, and are of a texture similar to that of the floral leaves. *Blossom* of three petals, the two upper strap-spear-shaped, concave, upright, as long as the calyx, inserted at the divisions at the base of the upper lip of the third petal. The *third petal* gaping, with two lips, surrounding the edge of the germen; *upper lip* roundish, concave, reddish brown, as short again as the two upper petals, divided within into two cells, each containing one of the stamens; *lower lip* oblong, strap-shaped, reflexed, somewhat longer than the calyx, flat, of a yellowish green hue, the sides and extremity tinged with brownish purple, the edges incurved at the base, with a longitudinal ridge along the middle, cloven into three at the end, the lateral segments strap-shaped, rather blunt, the middlemost very short, projecting underneath at the base into a nectary. *Nectary* roundish, slightly furrowed along the middle, concave, pendent from the base of the lower lip of the blossom. In *Fumaria* and the *Personateæ*, the nectary, as here, is an expansion of the petals, containing honey-like juice. *St.* (Readily distinguished by the small two-lobed spur or nectary, and the peculiar form of the *labelum*. *Fl. Lond.* E.)

(**GREEN SATYRIUM.** *?*) **FROG SATYRIUM.** (*Hubenaria viridis.* Br. Hook. *Satyrium viride.* Linn. Huds. Lightf. With. *Fl. Brit.* *Orchis viridis.* Sw. Willd. De Cand. Sm. E.) Meadows and pastures, in gravelly soil; rare. On Hellsefell-nab, near Kendal. Hudson. (Meadows between the house of Frox and the upper wood in the parish of Mold, Flintshire. Mr. Griffith. In Lligwy Wood. Anglesey. Welsh Bot. Near St. Anthony's Chapel, in the King's Park, Edinburgh. Mr. D. Stuart, in Grev. Edin. E.) Fields in the way to Glenfield near Leicester. Pulteney. Shotover-hill, Southleigh, Carnbury, Burford Down, Oxon. Sibthorpe. (Marlow Wood, Buckinghamshire. Mr. Gotobed. Stevington, Thurlleigh, and Bletsoe Meadows, Bedfordshire. Abbot. King's Hedges; Hinton, in a pit near Chalk-pit Close, Cambridgeshire. Relltan. Cocker's Fields, Staly Wood, Cheshire. Mr. Bradbury. Beamish Woods and fields adjoining, meadows near Moreton, Durham. Mr. Winch. Many places about Sunderland. Mr. Waugh. Meadow near a wood called Ugly Park, Essex. Mr. Forster. St. Faith's Newton Bogs, near Norwich. Smith. Meadow near Ludlow. Dr. Evans. Common about Yoxford, Suffolk. Mr. Davy. About Harleston, Suffolk, plentiful. Mr. J. Turner. Woods

at Winterslow, near Salisbury. Dr. Maton. Meadows and pastures about Great Comberton and Pershore, abundantly. Nash. Studley limekilns, and pastures near Rippon, not rare. Mr. Brunton, in Bot. Guide. Meadows about Cold Comfort; and Oversley Hill, Warwickshire. Purton, E.) P. June—Aug.

S. AL'IDUM. Bulbs fasciculated: leaves spear-shaped: lip of the nectary three-cleft: segments acute: the middle one blunt: (spur one third the length of the germen. E.)

Dicks. *H. S.*—(*Hook. Fl. Lond.* 107—*E. Bot.* 505. E.)—*Fl. Dan.* 115—*Hall.* 26. 1: at ii. p. 137—*Mich.* 26. A, B, C.

Stem nine to fifteen inches high, scored. *Leaves*, the lower oval, sheathing the stem. *Floral leaves* sharply acuminate, longer than the germen. *Petals* oval-spear-shaped. *Lip* short, the middle segment the longest! *Petals* white, lip green. *Woodw.* *Spike* one inch and a half long, cylindrical, (with numerous flowers. E.) *Leaves* strap-spear-shaped. (According to Prof. Hooker the proper character of the root is "digitato-fasciculate, radicles round," (cylindrical?) "flexuose, thick, brown." E.)

WHITE SATYRIUM. (*S. albidum.* Linn. Huds. Lightf. With. Sm. Pers. *Orchis albid.* Sw. Willd. De Cand. Sm. *Habenaria albid.* Br. Hook. E.) Moist meadows and also mountainous pastures, Llanberris. Mr. Davies. Dry mountainous pastures in Argyleshire and the Hebrides. Lightfoot. (On the grassy hills which surround Hafod, Cardiganshire. Miss Johnes. Found with *S. viride* in Cocker's Fields, Staley Wood, Cheshire. Mr. Bradbury. Mountainous pastures above Borrowdale. Mr. Turner. Near Wince Bridge, and the Wey Sike, Teesdale Forest, Durham. Rev. J. Harriman. Dallow Gill, Yorkshire. Mr. Brunton, in Bot. Guide. Rocky pastures near Blaen y Nant, near Llyn Ogwen. Carnarvonshire. Mr. Griffith. Lowdore, Cumberland; Shewing Shields, and at Nucton Brown, Northumberland. Mr. Winch. Campsie Hills, Scotland. Mr. Murray, in Hook. Scot. E.) P. June—July.

S. RE'PENS. Roots fibrous: (radical leaves egg-shaped: lip and petals spear-shaped. Br. E.) flowers pointing one way.

(*Hook. Fl. Lond.* 144. E.)—*E. Bot.* 289—*Jacq. Austr.* 369—*Fl. Dan.* 812—*Lightf.* 22. at p. 520—*Hall.* 22. 3. *Epipactis* at ii. p. 132—*Gunn.* ii. 6. 1—*Cum. Hort.* 35—*Ger. Em.* 227. 4—*Ger.* 175. 4—*Park.* 1355. 8—*J. B.* ii. 770. 2.

(*Root* creeping. *Leaves* on broad leaf-stalks, reticulated with brown veins. *Stem* a foot high, somewhat hirsute, especially towards the top. *Flowers* whitish, or straw-coloured, fifteen to twenty, from one side of the fruit stalks, inclining to a spiral direction. *Floral-leaves* spear-shaped, longer than the germen. E.) *Lip* terminating behind in a gibbous boat-shaped nectary, which would seem to connect it with the genus *Scrapias*. Lightf. Sowerby found two internal spear-shaped petals, like those of *Orchis ustulata*.

CREeping SATYRIUM (*S. repens.* Linn. *Goodyera repens.* Br. Hook. Sm. E.) Old mossy woods, but rare. Lightfoot. About Moy-hall, near Inverness, and other places in Scotland. In a wood near Gordon Castle. Dr. Hope. (Mountainous woods in Northumberland. Mr. Robson, Keswick. Mr. Hutton, in Bot. Guide: but the accuracy of these stations is doubted by Mr. Winch. Fir woods at Brodie, in Morayshire. Mr. Brodie. Near Duppin, Perthshire. Mr. Shillinglaw. In the woods of

Calloden, Gordon Castle, and Scone. Mr. Murray. Fl. Lond. E.)
P. June—Aug.

O'PHRYS.* *Nectary* slightly keeled underneath, (deflexed. E.)

(1) *Bulbs branched.*

O. NIDUS-A'VIS. (Bulbs fibrous, fasciculated: stem sheathed with scales, leafless: lip of the nectary cloven.

Dicks. H. S.—Hook. Fl. Lond. 58. E.)—E. Bot. 48—Hall, 37. 2. at ii. 149—Fl. Dan. 181—Trag. 785—Dod. 553. 2—Lob. Ic. i. 195. 1. Clus. i. 270. 1—Ger. Em. 228—Park. 1362, *Orchis*, &c.—H. Ox. xii. 16. 18—Pet. 70. 3—Flower and fruit only, Tourn. 250. 3.

Flowers numerous, and, as is the whole plant, brown. Root fixed laterally to the stem; fibres fleshy, short, numerous. Stem twelve to fifteen inches high, thickest at the base, firm, continuing long after the seeds are shed. Spike cylindrical, four or five inches long, rather diffuse below, compact above. Floral-leaves shorter than the germens, spear-shaped. Petals closely approaching, oval. Lip long, at first strap-shaped, but at the end cloven, the segments blunt, wide apart. Capsules on fruit-stalks, triangular, a prominent rib along each angle and side, the interstices plane. This, and *Orchis abortiva*, (once supposed to have been found in Britain. E.) are closely connected in habit with *Orobanchæ*, *Lathrææ*, and *Monotropa*. Woodw. (Whether this plant be truly parasitic, or nourished by decayed leaves and bark, seems questionable. E.)

BIRD'S-NEST TWAYBLADE. (*O. nidus-avis*. Linn. *Listera nidus-avis*. Br. Hook. Sm. *Epipactis nidus-avis*. Sw. Willd. E.) Woods and shady places, but rather rare. About Charlton, Maidstone, and Roehill, Kent. Aldburgh, Suffolk. Near Ingleton, and in Offley Park. Heydon, Norfolk. Mr. Bryant. Buckham Wood. Cumberland. Mr. Woodward. Woods on a limestone soil, not uncommon about Newton Cartmel. Mr. Hall. (Bentham-edge, Coalbrook Dale. Mr. Aikin. Woods about Bath. Marlow Wood, frequent. Mr. Gotobed; and the wood near Templehouse, Bucks, plentifully. Rev. H. Davies. In the Chase, a little to the east of Rushmore Lodge, and the little wood at Chettle, Dorsetshire. Rev. Mr. Chaffin. Cocken, in the wood on the west side of Whartons-haugh, Durham, and in the dingle above the old windmill on the right hand side; also in Castle Eden Dean. Mr. Winch. Wood on Lainsdownhills, Essex. Mr. E. Forster, jun. Woods near Pont Nedd Vachn, Glamorganshire. Mr. J. Woods, jun. Wood between Alkham and Ewel Minnis, near Dover, and in a wood at Ystrad-gunlais, Glamorganshire. Mr. Dillwyn. Gawdy Hall Wood, at Harleston, Norfolk. Rev. H. Tilney. In Norbury Park, near Eroydon, and on Ranmer Common. Mr. J. Woods, jun. Friary Wood, Hinton Abbey, Somersetshire; Thorp Arch Woods, near Weatherby. Rev. Archdeacon Piefson. Woods about Rippon. Mr. Brynton; in Bot. Guide. Frith Wood, near Painswick. Mr. O. Roberts. Forest Hill Wood, Peckham, Surry. Mr. W. Christy. Ragley, Oversley, and Middleton Woods, Warwickshire. Bree. In the Long Lith under shady beeches among dead leaves; in Great Dorton among the bushes, and on the Hanger plentifully; Selborne, Hants. White's Nat. Hist. Woods at Dalhousie. Grev. Edin. E.)

P. May—June.†

* (From *oprus*, the eye-brow; to stain which a certain species was used by the ancients. E.)

† Mr. Hall observes, that the woods in the part of Lancashire where he lives, are cut

O. CORALLORHIZA. (Root formed of many thick, fleshy, short fibres, much branched, and anastomosing: stem sheathed, leafless: spur so short as to be apparently wanting, combined with the germen. E.)

(Hook. Fl. Lond. 142—E. Bot. 1547. E.)—Fl. Dan. 451—Gunn. ii. 6. 2—Hull. 44. at ii. p. 159—Clus. ii. 220. 2—Ger. Em. 1585. 2—Park. 1363. 5—Ger. 1387—J. B. ii. 785. 1—Lightf. 23, at p. 523—Rupp. Jen. 2, 3—Orobanchæ, &c.

(Stem six to twelve inches high, greenish. Flowers six to eight, pale yellowish green, in a short, rather diffuse spike. Lip white, spotted with red, entire, deflexed. Floral-leaves minute. E.) In a specimen in my possession, the lower sheath terminates in a real spear-shaped leaf, upright, somewhat approaching, half an inch long, two lines broad, and above these two others which are shorter. Woodw. (Root remarkably resembling coral. This plant seems to admit of sportive variety, as Dr. Greville likewise describes a curious monstrosity affecting the inflorescence. E.)

CORAL-ROOTED TWAYBLADE. (SPURLESS CORAL-ROOT. *O. Corallorhiza*. Linn. *Corallorhiza innata*. Br. Hook. Snf. E.) Marshy or moist woods, very rare. South side of a hanging wood near the head of Little Loch-Broom, Ross-shire. Lightfoot. In woods of fir in the north of Scotland, Hudson. (Found abundantly in 1807 by Mr. E. J. Maughan amongst willows in a peat-bog near Ravelrig-toll, a little south of Dalmahoy Hill, about nine miles from Edinburgh. Sir J. E. Smith. E.) P. June—Sept.

O. SPIRALIS. Bulbs incorporate: stem somewhat leafy: flowers placed spirally, in one row: lip of the nectary entire, finely scolloped.

(Dicks. H. S.—E. Bot. 541. E.)—Curt.—Fl. Dan. 387—Dod. 239. 2—Lob. Obs. 89.* 2 and Ic. 1. 186. 1—Park. 1354. 3—Gies. 42.

Bulbs one to three, varying from oblong and half an inch, to cylindrical and one and a half inch long, rough, with a few fibres. **Stem** six to nine inches high, smooth below, downy above, springing from the side of the root. **Root-leaves** in a tuft, oval-spear-shaped, entire, smooth, bright green; **stem-leaves** three or four, spear-shaped, tapering to a point, embracing the stem. **Spike** two to four inches long. **Floral-leaves** longer than the germen, oval-spear-shaped, acuminate. **Flowers** numerous, greenish-white. **Petals**, the two inner spear-shaped, expanding, (the three outer cemented together as one. E.) **Lip** narrow at the base, widening downwards, at the end roundish and serrated. Woodw. **Stem** slightly twisted. **Spike-stalk** wreathed, downy. **Nectary** oblong-egg-shaped, at the base somewhat heart-shaped, and marked with a blunt tooth on each side, nearly doubled to, and involving the parts of fructification, slightly keeled underneath, somewhat fleshy, glossy, glutinous, green, with a whitish edge, and towards the point frosted. **Stamen** one, placed on the upper side of the style. **Pilament** none, except a short tooth projecting from the inner edge of the style. **Anther** of two cells and four valves, egg-shaped, upright, growing to the inner edge of the posterior tooth of the style. **Style** somewhat club-shaped, hooked, pro-

down every fifteen years; that for six or eight years after they are cut, this plant is not to be found, but as soon as the grasses are destroyed by the shade, it again makes its appearance, and in some places rather plentifully.

jecting from the point of the germen, concave above where it receives the mass of pollen, which sometimes remains in it even after the flower is decayed; margin upright, with five teeth beneath, obliquely lopped. *Summit* flat, somewhat egg-shaped, green, glutinous,* cloven at the point. St. (exhaling a delicately fragrant odour. E.)

TRIPLE TWAYBLADE, or LADIES' TRACES.† (Welsh: *Caineirian nydd-droddig*. *O. spiralis*. Linn. *Neottia spiralis*. Sw. Br. Willd. Hook. Sm. E.) Dry sandy and chalk pastures, and moist meadows. Dry barren clayey pastures, and on a boggy common. Woodward. In a croft near Whitehall, on the road from Truro to Redruth. Mr. Watt. Under the rocks at Pinney Cliffs, near Lyme. Mr. Knappe. Sides of sunny banks in the limestone pastures about Newton Cartmel. Mr. Hall. (Pastures about Voylas, Denbighshire. Mr. Griffith. In Anglesey. Welsh Bot. Allerton, and in the woods at Ince, near Liverpool. Dr. Bostock. Keygate Hill, Surry. Mr. Winch. In a field close to the brick-kiln on the road from Bidford to Binton, and at Snitterfield, near to the Lodge Farm, Warwickshire. Purton. On the slope of the down ascending to Walton Castle, on the Clevedon side, Somersetshire. Mr. F. Russell. In the Long Lith, and towards the south corner of the common, Selborne. White's Nat. Hist. Lawns about Wick House, near Bristol. On the Ness, Teignmouth. E.) P. Aug.—Oct.

(**O. GEMMIFERA.** Leaves lanceolate, as tall as the stalk: spike three-ranked, twisted; bracteas smooth.

Root of two annual knobs, each three inches long, and one-fifth of an inch in diameter near its origin, and tapering downwards. *Leaves* five or six, upright, three-ribbed, three inches long. *Stalk* erect, two inches high, bearing in the upper branches two or three lanceolate *bracteas*. *Spike* an inch long, ovate, dense, erect, of about eighteen white *flowers*, each accompanied by a *bractea* as tall as itself. *Flowers* much resembling those of *Neottia* (*O. spiralis*), but the *calyx* and *petals* are twice as long as in that species, and the *calyx* is more taper-pointed. Outside the *flowers* and *capsule* downy. *Buds* destined to flower the following year are formed among the leaves, at the bottom of the flower-stalk. After flowering the *root* decays, and the following spring each bud puts forth a pair of oblong *knobs*, and becomes a separate plant.

PROLIFEROUS LADIES' TRACES. *Neottia gemmipara*. In marshes on the west coast of Ireland. Near Castletown, opposite to Bearhaven, on the northern side of Bantry Bay. Mr. Drummond.

P. July. Sm. Eng. Fl. E.)

O. OVATA. Bulb fibrous: stem two-leaved: leaves egg-shaped, opposite: lip of the nectary cloven half way down.

Hall. 37. 1. at ii. p. 150—*Curt*. 177—(*E. Bot*. 1548. E.)—*Gars*. 425. 2—*Dod*. 242. 1—*Lob*. Obs. 161. 3. and 1c. i. 302. 2—*Park*. 504. 1—*Fuchs*. 566—*J. B.* iii. 533. 2—*Fl. Dan*. 137—*Matth*. 1225—*Lonic*. i. 241. 2—*Ger*. 326—*Pet*. 70. 10.

(*Stem* about a foot high. *Leaves* striated. *Flowers* distant upon the spike,

* (Sprengel has observed small flies adhering to the glutinous stigmas of some of the *Orchidea*: like birds on a lipied twig: hence these plants may rank in the lower order of *Muscivora*, and perhaps not without a further design than may be at first apparent. E.)

† (The vulgar orthography, as here given, appears to be a corruption of *treses*, and these probably were originally designated *Our Lady's*, as ingeniously suggested in *Fl. Lond*. E.)

yellowish green. *Lip* long, yellowish green, slightly deflexed. *Floral-leaves* shorter than the stalk, oval, acuminate. E.) *Petals* forming a kind of hood, the three outer spear-shaped, the two inner strap-shaped, somewhat tinged with purple. *Lip* as long as the germen: nearly strap-shaped, rolled back at the edges; segments somewhat apart, with mostly a short pointed intermediate globe. *Anthers* not elastic. Woodw. *Calyx*, leaves three, apparently extensions of the blunt angles of the germen, which in the right capsule appear in the form of narrow valves. *Petals* apparently extensions of the sides of the germen, which in the right capsule appear in the form of broad valves. *Anther* sessile, inserted into the apex of the summit, cloven, evidently one only, appearing like a tongue between the summit and the upper segment of the blossom, soon falling off. *Case of the stamen* on the under side of the upper segment of the blossom, fleshy, folded into two cells, which inclose the two lobes of the anther in its earlier state, and when those are ripe and bursting from their inclosures have disengaged themselves, closing again, and pressing upon the anther, remain after it has fallen off, and turning brown, might easily be mistaken for its anther. *Capsule* not twisted, just before shedding its seed inversely egg-shaped, many times larger than the germen; hexangular, three of the angles prominent but blunt, the three alternate ones keeled; of one cell, and six valves; three strap-shaped, forming the blunt angles, and three placed alternately, spear-oblong, thrice as broad, forming the acute angles of the capsule; opening widely at the sutures, but connected above and below, *letting out while yet green the seeds at the suture*; in this state nearly globular, yellowish green, resembling in figure an antique helmet with a vizor. *Seeds* very numerous, adhering to the inside of the broader valves, in two lines along the back of the keeled angle; oblong, tapering each way, white, membranous, reticulated, each containing a single globular kernel rather smaller than the diameter of the case which contains it, opaque and greenish white. St. *Flowers* with a fragrant musky scent.

COMMON TWAYBLADE. (Welsh: *Cuineirian Gef'ell-lys*. O. *ovata*. Linn. *Listera ovata*. Br. Hook. Sm. E.) Woods and moist shady thickets: not unfrequent in meadows and pastures. Beechwood, on Lansdown. Rev. G. Swayne. Hurcot Wood. Dr. Stokes. (About Crosby, near Liverpool. Dr. Bostock. In a plantation near the Saltisford Common, Warwick. Perry. About Ormathwaite, and in Ennerdale, Cumberland. Mr. Winch. Above Baron-hill, and in the woods at Plas-newydd, Anglesey. Welsh Bot. Pentland Hills, about Currie and elsewhere, near Edinburgh. Dr. Greville. In meadows near Ditton on the Clea Hills, Salop. E.) P. May—June.

Var. 2. J. B. iii. 534. Much smaller and greener than the preceding; Leaves sometimes three. (Park. Ray.) Leaves triangular or heart-shaped. Ray.

(Mr. Borrer, in the *Botanist's Guide*, mentions having found in Sussex a monstrous variety, in which two, and in some flowers three, of the petals have assumed the form and size of the nectary-lip, and which has flowered in the same manner since its removal to a garden. E.)

BIGLUM PALUSTRE, Park, 505. R. Syn. 385. Woodw. Low wet grounds between Hatfield and St. Albans, and divers places in Romney Marsh. Park. Boggy and fenny grounds near Gamlingay, Cambridgeshire. Hurst Hill and Tunbridge Wells. R. Syn. Hallinghall Wood, near Loughborough. Budden Wood. Stocking Wood, near Leicester. Pulteney.

O. cordata. Bulb fibrous: (stem with two opposite, heart-shaped, leaves: lip with two teeth at the base; bifid at the apex; segments strap-awl-shaped. E.)

Dicks. H. S. (Hook. Fl. Lond. 143. E. Bot. 358. E.) Hall. 22. 4; Ophrys, &c. at ii. 132—J. B. iii. 534. 2—Pet. 70. 11.—H. ex. xii. 11. row. 1. 4. —Gunn. ii. 3. 6.

(Root, fibres not fasciculated. Stem three to six inches high, very slender. Spike short, with a few very small, brownish green flowers. E.) *Floral-leaves* minute, oval-spear-shaped, as long as the fruit-stalks. *Petals* expanding, the three outer oval-spear-shaped, the two inner spear-shaped. *Lip* strap-shaped, purplish at the base, divided below the middle; segment awl-shaped. Woodw. (This plant differs remarkably from some of its congeners in having no ligulate process at the back of the anther. A small bud or rudiment of the future year's stem is always seen nestled among the fibres, and this is analogous to one of the tubers of the *Orchis* genus. Hook. E.)

LEAST TWAYBLADE. HEART-LEAVED TWAYBLADE. (*O. cordata*, Linn. *Listera cordata*. Br. Hook. Sm. E.) Moist mountainous heaths, in boggy ground, Yorkshire, Lancashire, and Westmoreland. On Ingleborough, and on the high moor between Sheffield and Chatsworth. Sir J. E. Smith. Raceground, near Scarborough. Mr. Travis. Gold Hill, near Muggleswick, and among the ling in Charmberry, Eggleston, Durham. Rev. J. Harriman. *Bot. Guide.* Blair Athol. Mr. Winch. Pentland Hills. Dr. Greville. E.) P. June—July.

(2) *Bulbs undivided.*

O. LOESE/LII. Bulb roundish: stalk naked, triangular: leaves two, egg-spear-shaped; lip of the nectary egg-shaped, recurved. E.)

(*Dicks. H. S. E.) Fl. Dan. 877—E. Bot. 47—Lob. Adv. Alt. 506. 1—J. B. ii. 770. 1.—Pluk. 247. 2—Pet. 70. 12.*

Leaves nearly as long as the stalk. *Flowers* not exceeding five to eight. *Lip* large in proportion to the other parts. Linn. *Stalk* six inches high, upright, with from three to five angles, smooth. *Root-leaves* very entire, bare. *Flowers* in a bunch, yellowish green. *Petals*, the three outer strap-shaped, reflexed, green, the two inner on the sides thread-shaped, somewhat purplish. *Lip* very entire, purplish. *Capsule* upright, oblong, angular. *Seeds* numerous, small. Huds.

DWARF TWAYBLADE. *O. Loeselii*. Linn. *O. Lilifolia Loeselii*. Huds. (*Malaris Loeselii*. Sw. Willd. Sm. Br. E.) St. Faith's-Newton bogs, near Norwich; a single specimen given to Mr. Lightfoot. Mr. Pitchford. None since found either in Norfolk or Suffolk; but in 1785, I saw a specimen from Mr. Sole, which was found on Hinton Moor. Mr. Woodward; and on other Moors near Cambridge by Mr. Relhan. (Boggy grounds about Ham Ponds near Eastry, Kent. Dillwyn. Bogs near Tuddenham, Suffolk. St. T. G. Cullum. *Bot. Guide.* E.) P. June—July.

O. MONORCHIS. Bulb globose: stalk naked; lip of the nectary ~~the~~ cruciform: (leaves radical, two, spear-shaped. E.)

(*Dicks. H. S.—Hook. Fl. Lond. 138—E. Bot. 74 E.)—Seguier. ii. 16. 15—J. B. ii. 768. 3—Fl. Dan. 102—Hall. 22. 3; Monorchis, at ii. p. 132—Mich. 83. 3—Gmel. i. 4. 1—Rapp. 2. 5; Monorchis, at p. 238.*

Stem about six inches high, cylindrical, smooth. *Root-leaves* two or three, sheathing the stem, spear-shaped, smooth, shining, yellowish green; *stem-leaves* one or two awl-shaped, sessile. *Spike* one or one and a half inch long, with numerous flowers. *Flowers* small, greenish yellow, with a faint musky scent. *Floral-leaves* spear-shaped, taper-pointed, the lower equal to or somewhat longer than the germen, the upper somewhat shorter. *Germen* oval, sessile, tapering above into a sort of fruit-stalk, whence the flower hangs obliquely nutant. *Petals*, the three outer oval-spear-shaped, somewhat approaching, the two inner broad at the base, scalloped, and suddenly narrowing into strap-spear-shaped. Woodw. (Most tuberous-rooted Orchises present the two tubers (of the present and succeeding year,) of nearly equal dimensions; but here, while the tuber which affords nourishment to the existing stem is sessile, large, and shrivelled, the other is seen forming a little swelling at the extremity, of an horizontal fibre. The future year's plant will thus arise at some considerable distance from its parent. Hook. & Th. Lond. E.)

YELLOW MUSK OPHRYS or TWAYBLADE. (*O. monorchis*. Linn. *Herminium monorchis*. Br. Hook. Sm. E.) Barren pastures in calcareous soil. Chalk-pit at Marham, near Swaffham. Mr. Woodward. Near Snettisham. Mr. Crowe. (In a chalk pit by the road side at Gerard's Cross, Bucks. Blackstone. Chalk pits near Gogmagog Hills. Relhan. In a chalk pit near Sicklesmere, and at Little Saxham, Suffolk. Sir T. G. Cullum. In the great chalk pit on Epsom Downs, near Ashstead Park. Mr. T. F. Forster, jun. *Bot. Guide*. Box-hill, Surry. Mr. Winch. E.)
P. July.

O. ANTHROPOPHORA. Bulbs roundish: stalk leafy: lip of the nectary strap-shaped, three-cleft; the middle segment long; cloven.

(Curt. E.)—*E. Bot.* 29—*Col. Ecphr.* i. 320. 1—*Pet.* 68. 8—*Hall.* 23, at ii. 133—*Flowers only*, *Vaill.* 31. 19 and 20.

Stem about one foot high, firm, smooth, cylindrical at the base, somewhat angular upwards. *Root-leaves* four or five, expanding, spear-shaped, varying in breadth; *stem-leaves* one or two just above the former, closely embracing the stem. *Spike* long, diffuse. *Floral-leaves* membranous, spear-shaped, finely tapering at the end, half as long as the germen. *Petals*, the three outer oval strap-shaped, greenish, with purple lines and edges; the two inner strap-shaped. *Lip*, (longer than the germen. E.) the two outer segments strap-shaped, slender; the middlemost as long again, cloven half way down into two pointed segments, rather wide apart. Woodw.

GREEN MAN* OPHEYS or TWAYBLADE. (*O. anthropophora*. Linn. Curt. Dieks. Fl. Brit. *Aceras anthropophora*. Br. Sm. H.) Chalky meadows and pastures. Near Northfleet, Greenhithe, and other places in Kent. Ashwellthorpe, near Norwich. Mr. Crowe. (Forncet, Norfolk. Mr. Fox. Fl. Brit. Bank west of Crabbe, and in Botton church-yard, Kent. Mr. Dillwyn. In a dry pit at the end of Mr. Wright's garden at Meudham, Norfolk. Rev. H. Tilney. Blackenham, near Ipswich. Rev. W. Kirby. Chalk pit near Cheam, Surry. Mr. T. F. Forster, jun. in *Bot. Guide*. Box-hill and Juniper-hill, Surry. Mr. Winch. E.)

* (In reference to the supposed resemblance of the flower to a naked human figure, with its hands and legs cut off. "*O, flos nudi hominis effigiem representans.*" Rudb. Elys. Bash. Pin. E.)

O. MUSCIFERA. Bulbs roundish; stem leafy; lip of the nectary convex, cloth-like, with three divisions, the middle segment cloven.

(Hook. Fl. Lond.—Fl. Dan. 1398. E.)—Hall. 24. at ii. 135—Gunn. ii. 3. 1—E. Bot. 64—Jacq. Ic. 1—Walc.—Pet. 68. 10—Dod. 238. 3—Lob. Obs. 91. 1—Park. 1352. 12—Lob. Obs. 90. 4. & ic. 1. 181—Ger. Em. 213. 6—Park. 1352. 10—Flowers only, Vaill. 31. 17 and 18.

Petals, the two inner thread shaped, resembling the antennæ of an insect.

Relh. Stem nine to fifteen inches high, firm, above naked, yellowish green, and nearly cylindrical. Leaves three or four, spear-shaped, pale green, shining, with numerous longitudinal veins, the intermediate space covered with a thin, somewhat puckered, pellucid skin, giving a silvery hue. Floral-leaves strap-spear-shaped, keeled, much longer than the germen, pale yellowish green. Flowers thinly scattered, four to fifteen, having much more the appearance of a fly than those of *O. apifera* of a bee.

Petals, the two inner expanding, deep reddish brown, fringed with short hairs, cloven at the base, fixed to the upper lip of the nectary.

Nectary, the upper lip hooded, covering the stamens: the lower with three lobes, the side lobes strap-shaped, short, entire, the middlemost somewhat oval, reflexed at the edges, divided by a deep angular notch into two lobes, reddish brown, velvety, with a blueish naked spot in the centre. Woodw. The blue spot upon the base of the middle segment of the nectary lip contributes much to the resemblance of the flower to a fly.

FLY OPHEYS OR TWAYBLADE. (Welsh: *Caincirian yr ednogyn*. E.)

O. insectifera myodes. Linn. Meadows and pastures in calcareous soil. Cambridgeshire, Suffolk, Essex, Yorkshire, and Anglesey, Chalk Hills near Northfleet, and near Croydon and Wrotham. Bath Hills, near Bungay, and Earsham Wood, Suffolk. Mr. Woodward. In Plumpton Woods, near Ulverston. Mr. Atkinson. St. Vincent's rocks, Bristol, behind the lower pump-room. (Chalky pastures near Shefford, Bedfordshire. Mr. Fowler. On a detached rock on the south branch of Castle Eden Dean, Durham, and, together with the *Cypripedium* in the north branch; also above the Gunner's Pool. Mr. Winch. Sunny Bank at the side of Coombe Wood, Doyer. Dillwyn. In Plumpton Woods, near Ulverstone, Lancashire. Mr. Woodward. In the walks of the Moat Garden at Fincham, Norfolk. Rev. R. Forby. Barrowfield Wood, near Kendal. Robson. On Hampton Down, under the cliffs, Somersetshire. Bot. Guide. Vale of Dudcombe, near Painswick. Mr. O. Roberts. Norberry Park, Surry, Gastle Eden Dear, Durham. Mr. Winch. N. E. end of Cors-Bodeillio, and in the turbarry between that and the mansion of Llandlyfian, Anglesey. Welsh Bot. E.) P. May—June.

Ray mentions a larger sort, found in a pasture near Pestingford, Suffolk, and Welling, Hertfordshire, Greenhithe, and in the old chalk pit near the White House, by N. Gray. R. Syn. 379. J. B. ii. 768. (Smith thinks it scarcely differs sufficiently to form a permanent variety, but has introduced it as *O. muscifera* β, Fl. Brit. E.)

O. APIFERA. Bulbs roundish: stem leafy: (lip of the nectary inflated, villous, five-cleft; terminal segment awl-shaped; recurved. E.) shorter than the petals. Woodw.

(E. Bot. 383. E.) Curt.—Walc.—J. B. ii. 767. 1—Fuchs. 560.—J. B. ii. 763. 2—Trag. 783—Vaill. 30. 9—Dod. 238. 1—Lob. Obs. 91. 2; & Ic. 180. 1—Ger. Em. 212. 3—Park. 1351. 5—Ger. 166. 13—Pet. 69. 2—Matth. 880. 2—Flowers only, Vaill. 30. 9.

(Resembling the preceding in general habit; but usually larger. E.) *Petals*, the three *outer* sometimes reflexed, spear-shaped, as long as the *germen*, the two *inner* expanding, purplish on the inside, green without. *Nectary lower lip* rusty brown, very much resembling a small humble bee, inversely egg-shaped, the *side lobes* bent down, villous, the edges bent in, the upper angles loose and upright, resembling the wings of a bee. *Stamens* yellow, inserted into the upper edge of the summit, bursting when the flower is expanding from the membranous cases of the upper lip, and bending down on the surface of the summit, continuing fixed to its edge. *Anthers* club-shaped, compound.

BLE OPHRYS or TWAYBLADE. BEE FLOWER. *O. insectifera*. Linn. (*O. apifera*. Huds. Br. Curt. Sm. E.) Meadows and pastures south side of Great Comberton, towards Woollier's Hill, frequent. Nash. Tedestone, near Whitbourne, Worcestershire. Mr. Ballard. Area of Carisbrook Castle, Isle of Wight. Dr. Stokes. About Earsham. Mr. Woodward; and Mulbarton. Mr. Crowe. On the high ground behind the St. Vincent's Rocks, Bristol, near where *O. muscifera* grows, but less plentiful. On the chalk hill, near Heddon Wharf, and in a chalk pit near Bulstrode, Bucks. Mr. Gotobed. Madingley Wood, Cambridgeshire. Relhan. In a field opposite the old bath, Matlock. Pilkington. Rooker's Gill, near Fulwell. Mr. Weighell. Near Ryhope turnpike gate, Durham. Rev. J. Fenwick. Chalk pits at Purfleet, Essex. Mr. T. F. Forster, jun. In Haley Wood pits, near Dartford, and common about Dover. Mr. Dillwyn. Benthall Edge, near Ludlow. Dr. Evans. Not uncommon about Yoxford, Bury, Bungay, and Harleston, Suffolk; about Boxhill, near Dorking, in great abundance. Mr. J. Wood, jun. Trenches at Old Sarum. Dr. Maton. Near Hildenlay Stone Quarry. Mr. Teesdale. And lower banks, Rippon and Studley Woods, Yorkshire. Mr. Brunton. In all the hilly pastures about North Stoke, Somersetshire. *Bot. Guide*. Shepscombe Hill, Painswick. Mr. O. Roberts. Cracombe Hill, near Flatbury, and beside the turnpike road at the foot of the hill, Rufford, in Purton. Rocks near Babicombe, Devon. Rev. J. Pike Jones. E.) P. June—July.*

(An elegant variety with a *white flower* has been found by Dr. Pulteney, at Borden, Hampshire, and by Miss Ulthoff, near Halesworth, Suffolk. *Bot. Guide*. E.)

O. ARANIFERA. Bulb roundish; stem leafy; (lip of the nectary villous, three-lobed, pointless, emarginate, reflexed: E.) longer than the petals. Woodw.

* (The wonderful resemblance of this flower to the humble-bee, to which the following stanza alludes;

"Perhaps his fragrant load may bind
His limbs; we'll set the captive free;
I sought the living bee to find,
And found the picture of a bee:"

attracts general admiration, in a still greater degree than its interesting congeners, which also reward the herbarist's researches amidst the romantic scenery of the vicinity of Bristol. But the number of roots annually exposed to the mercenary natives, (forgetful that the golden egg can no longer be produced when the matrix is destroyed;) together with the ravages of underlings incautiously employed by strangers, threaten the total destruction of these delicate aborigines, who seem to have sought security from the rude violence of man in the recesses of rocks all but inaccessible, whence they would now implore the timely interposition of science and of taste. It may possibly tend to prevent the utter extirpation of these attractive vegetable curiosities to state that, by providing a soil such as naturally produces them, and allowing the grass to surround them, they may be cultivated and increased in gardens without difficulty. E.)

Curt—*E. Bot.* 65—*Lob. Ic.* i. 179. 2—*J. B.* ii. 767—*Ger. Em.* 212. 3—*Park.* 1350. 4—*Pet.* 39. 3—*Flowers only, Vaill.* 31. 15 and 16.

Much resembling *O. apifera*. Stem and leaves shorter. Floral-leaves narrower. Flowers smaller. Petals, the three outer oval-spear-shaped, blunt, greenish, much shorter than the lip; the two inner strap-shaped, very short. Lip rolled in at the edges, not lobed, only slightly notched at the end, villous, except the spot towards the base, dusky, with greenish margins, green underneath. Woodw. It is from the breadth of the lip and its being marked with different shades of brown, that it derives its fancied resemblance to a spider.

SPIDER OPHRYS. (*O. aranifera*. Huds. Willd. Sm. *O. fucifera*. Curt. E.) Haller supposes his *Orchis n.* 1266. β to be *O. apifera*, and that in the more advanced state of its growth the middlemost segment turns back, and becomes this plant; but this segment is reflexed in *O. apifera*, even before the flower is fully expanded; not to mention that *O. aranifera* blossoms in May, and *O. apifera* usually not till July. Woodw. (Smith found Haller's plant abundant in Italy, and is convinced it is a different species not yet discovered in Britain. E.)

(Probably illustrative of the above is *O. arachnites* of Willd. Curt. Mag. t. 2516. Hoffm. characterized in Eng. Fl. as "in general like *O. apifera*; lip of the flower essentially different, much broader and more dilated, nearly twice as long as the calyx; its margin thin, expanded, and directed forward, not reflexed; the terminal lobe likewise thin and flat, pointing forward, more or less heart-shaped and notched, not awl-shaped and reflexed; disk of a duller brown." The lip is admitted to vary, but the terminal segment deemed constant. Plentiful on the southern acclivities of the chalky downs near Folkstone; the upper half of the conical hill which forms the north-west boundary of the Cherry-garden near that town abounds with it. Mr. Gerard Smith. E.) P. July.

Chalky meadows and pastures, as about Northfleet; and gravel pits, as one in the open field near Great Shelford, and near Bartlow, Cambridgeshire. In dry pastures about Barnham, near Tadcaster. Near Bury. Mr. Woodward. (On the Hills about Dover. Dillwyn. In an old stone-pit ground by Walcot, a mile from Barneck, Northamptonshire. Dr. Bowles. Westley Bottom, both Saxhams, Suffolk. Sir T. G. Cullum. Chalk pits near Leatherhead, Surry. Curtis. Bot. Guide. E.) P. April—May.

(*O. FUCIFERA*, considered by Smith a distinct species, is described in Eng. Fl. as in size, habit, and general aspect of the flowers, resembling the last; also growing in similar situations. E.)

MALAXIS.* *Nectary* one leaf, heart-shaped, concave, inclosing the stamens and pistils.

M. PALUDO'SA. Stalk pentagonal; leaves sheathing, battledore-shaped, (scabrous at the extremity; lip concave, acute. E.)

(Hook. Fl. Lond. 197. E.) *E. Bot.* 12—*Rose* 2. 3—*K. liph.* 9.

Bulbs egg-shaped, (partly above ground. E.) bowed in, throwing out roots below, cohering downwards as a chain, with a small branch between them, slender, with rather numerous, scattered, greenish flowers. (lip much resembling the other segments of the perianth. Hook. Leaves two or three from the root, and near the base of the stem half an inch long,

* (MALAXIS, softness; possibly alluding to the delicate texture and habit of these plants. E.)

concave. E.) *Stem* three to five inches high. *Spike* half as long as the stem. *Floral-leaves* spear-shaped, shorter than the fruit-stalks. Woodw. MARSH TWAYBLADE. (*Malaxis paludosa*. Sm. Br. Willd. Hook. Sw. E.) *Ophrys paludosa*. Linn. Cawston Heath, near Norwich. Mr. Crowe. Between Rusland Chapel and Thwaite Moss in Furness Fells. Mr. Jackson. (Norton Bog; Cannock Wood, Staffordshire. Mr. Bagot. Boggy ground in Coedy Tù Dù, near Llanberris, Carnarvonshire. Mr. Griffith. Gamlingay Bogs, Relhan, and on Hinton Moor, Cambridgeshire. Dr. Manningham. West of Middleton, Yorkshire. Mr. Robson. Bot. Guide. A little to the east of Ben Vorlich, and above the house of Ard-vorlich. Mr. Arnott. Fl. Scot. Vid. also Mag. Nat. Hist. i. 441. and fig. E.)

P. July—Aug. E.

SERA'PIAS.* *Bloss.* six petals: *Nectary* egg-shaped, tumid: *Lip* egg-shaped: *Caps.* beneath, one-celled, three-valved.

S: LATIFO'LIA. *Leaves* egg-spear-shaped, embracing the stem: *flowers* drooping: *lip* pointed, entire, shorter than the petals.

(Hook. Fl. Lond. 102. E.) E. Bot. 269—Fl. Dan. 811—Gunn. ii. 5. 3 to 6 —Hall. 40. 2. at ii. p. 154—*Flower* only, Crantz vi. 1. 6.

Leaves and *floral-leaves* becoming gradually narrower as they ascend. *Germen* pear-shaped. Woodw. *Root*, fibres thick, filamentous. (*Stems* green, sometimes more or less of a brownish purple, one to two feet high. *Spike* from three to eight inches long. *Flowers* from six to twenty or more, much closer set than in the next species, pendent. *Cal.* leaves three, brownish green, broad spear-shaped, keeled. *Petals*, more or less approaching, never spreading; Hook. E.) the two lateral ones resembling the leaves of the calyx; purplish green. *Nectary*, the upper lip glandular, white, fleshy; the lower distended at the bottom into a nearly globular cavity; purple within, and of a brownish green without, towards the end flat, purplish, and somewhat scalloped. *Anthers* yellowish white. *Pistils* two, white, fleshy, fixed on the glandular receptacle. *Capsule* inversely egg-shaped, gibbous on the upper side, smooth, or nearly so. *Fruit-stalk* long.

BROAD-LEAVED HELLEBORINE. (Welsh: *Caldrist Dyglanndail*. S. latifolia. Linn. *Epipactis latifolia*. Br. Sw. Willd. Decand. Hook. Sm. E.) Woods, groves, and hedges. Common in the N. Riding of Yorkshire, but I have, as yet, seen only one within fifty miles of Leeds. Mr. Wood. Matlock, and northern counties, as Buckham Wood, Cumberland, and in an elevated situation at the foot of Conick Scar, four miles from Kendal, amongst loose stones and rubbish, not accessible without some danger. Mr. Woodward. In the red rock plantation, Edgbaston Park, near Birmingham. (Crosby Marsh, near Liverpool. Mr. Shepherd. Woods at Wigfar, Denbighshire; in the wood near the house at Llewenny, close to the bridge that crosses the river Clwyd, Denbighshire; rocks near Daler Goch mine works, Flintshire. Mr. Griffith. In the wood above Baron-hill, Anglesey. Welsh Bot. Frith Wood, near Painswick, but not frequent. Mr. O. Roberts. Ragley Woods, Parton. Near Leamington, on the north road to Warwick. Perry. Wood N. W. of Hastings. Dr. Pentock. In the High-wood, Selborne, Hants, under shady beeches. White's Nat. Hist. Woods and pastures at Bothwell, Hamilton, &c. Hopkirk, in Hook. Fl. Scot. E.)

P. July—Aug.

* (Serapis, an Egyptian deity, probably referring to his Æsculapian faculty; or perhaps after Serapion, a physician of Alexandria, founder of the empiric sect. E.)

Var 2. Huds. Leaves variously oval-spear-shaped, much longer and narrower. Flowers very dark coloured, (blackish red.) Corresponding exactly with *Fl. Dan.* 811. except that the spike is much longer. Woodw. Sides of mountains near Malham, Yorkshire. Ray. Woods in Westmoreland and Cumberland. Mr. Woodward. P. Aug. (Nearly resembling the last species is *S. (Epipactis) purpurata*, Sm. Eng. Fl. "Root certainly parasitical; whole plant, when fresh, glowing with a beautiful red lilac colour;" observed in a wood near the Noris farm, at Leigh, Worcestershire, in 1807, by Rev. Dr. Abbot. E.)

S. PALUSTRIS. Leaves spear-shaped, embracing the stem: flowers drooping: lip scolloped, blunt, longer than the petals.

E. Bot. 270—*Hal.* 39. at ii. p. 154—*Fl. Dan.* 267—*Pet.* 70. 8—*Clus.* i. 273. 1—*Dod.* 384—*Lob. Obs.* 169; *Ic. i. and 312.* 1—*Ger. Em.* 442. 1—*Park.* 218. 4—*Pet.* 70. 5—*Flowers only*, Crantz vi. 1. 5.

(*Stem* one foot high, purplish above. E.) The outer half of the lip so slightly attached as to be easily shaken off. Wood. Flowers mostly from one side of the stem. Lip divided transversely almost through; the half next the receptacle boat-shaped, with purple ribs, at the bottom with a yellow line, spotted with orange; the outer half pendent, roundish, with an angular gibbous appendage at the base, in which, previous to the expansion of the flower, the anthers are inclosed. *Germen* long and narrow, which, in *S. latifolia*, is short and inversely egg-shaped; when fully grown elliptical. Woodw. Leaves sometimes egg-spear-shaped, with seven ribs. Hollefer; and sometimes egg-oblong and blunt. Fruit-stalk downy, filiform. *Germens* downy, slightly scored, long, tapering down to the fruit-stalks, and a little towards the point. St. Spike about four inches long, flowers from six to twelve, much wider apart than in the preceding species. The different length of the lip, and the shape of the *germen* will always discriminate this from the species immediately preceding; and should the woolliness of the fruit stalk, the flower and the *germens* be constant in this species, and always wanting in the former, as it is in the specimens now before me, their distinctions will be obvious at first sight.

MARSH HELLEBORINE. (Welsh: *Caldrist y gors.* E.) *S. palustris*: (by far the most appropriate trivial name. E.) Lightf. E. Bot. F. Brit. &c. *S. longifolia*. Linn. and the last four editions of our "Arrangement of British Plants." (*Epipactis palustris*. Br. Hook. Fl. Lond. Sw. Willd. De Caid. E.) Marshy and watery places. Bogs at Chisselhurst. Ray. Dry chalky ground, as in the old chalk pits by the White House, between Eltham and North Cray. Sherard in *R. Syn.* Plentifully in one morassy spot of two or three acres within a mile of Leeds. Mr. Wood. Swampy meadows, Robinson's Street, on the borders of Malvern Chase. Mr. Ballard. Bogs in Norfolk, frequent. Mr. Woodward. Knutsford Moor. Mr. Aikin. (Bog on Galleywood Common, near Chelmsford. Mr. W. Christy. Crosby, near Liverpool. Dr. Bostock. Near the house at Llewenny, and in the woods leading from the house to the garden at Wygfair, Denbighshire. Mr. Griffith. Cae rhôs Lligwy; near Bodgylchad, &c. Anglesey. Welsh Bot. In bogs at Hutton, and Castle Eden Dean, Durham. Mr. Winch. In a field one mile east of Anstruther. Mr. Chalmers. Hopk. Scot. E.) P. July—Aug.

S. ENSIFOLIA. Leaves sword-shaped, pointing from two opposite lines: floral-leaves very minute; much shorter than the *germen*:

flowers upright: lip of the nectary blunt, half as long as the petals.

(Hook. Fl. Lond. 77—Purt. 4. E.)—E. Bot. 494—Fl. Dan. 506.

Root, fibres rather thick, Stem a foot or more in height, numerous, upright. Root-leaves long, narrow, pointed, resembling those of reeds. Flowers white, eight or ten, in a loose spike. Stem-leaves, the longest six inches long, half an inch wide, bright green, smooth, shining, with five or seven principal ribs, the lower embracing the stem, the upper alternate.

(Flowers smaller and not quite so showy as in *S. grandiflora*, but a slight difference will be seen in the *labellum*. Leaves much narrower, regularly distichous; but the most striking mark of distinction is to be found in the bracteas, which in *S. ensifolia* are much shorter than the germen, except in the lower flower; whilst in *S. grandiflora* they are considerably longer, and resemble the leaves. Hook. E.)

SWORD-LEAVED HELLEBORINE. (NARROW-LEAVED HELLEBORINE. *S. ensifolia*. Linn. *Epipactis ensifolia*. Sw. Willd. De Cand. Br. Hook. E.) Under Brackenbrow or Brakenuray, opposite Helk's Wood. In the end of a wood where *Cypripedium calceolus* grows, one mile from Ingledon, Yorkshire. R. Syn. Lord Lonsdale's woods, at Lowther. Mr. Woodward. (Abberley Hill, Worcestershire. Mr. Bourne. Alderbury Common, Wiltshire. Dr. Maton. Castle Eden Dean, Durham. Mr. Winch. Oversley, and Ragley Woods, Warwickshire. Purton. Box Hill, Surry. Fakeham Wood, Kent; and Norbury Park. Graves, in Fl. Lon. Woods of Methven, Perthshire. Mr. T. Bishop. Hook. Scot. E.)

S. GRANDIFLORA. Leaves egg-spear-shaped, sessile; floral leaves as long as the capsule: flowers upright: lip of the nectary blunt, shorter than the petals.

Dicks. H. S.—(Hook. Fl. Lond. 76. E.)—Halt. 41. at ii. p. 155—E. Bot. 971—Ger. 358. 2—Pet. 70. 7—H. Ox. xii. 11. 12—Flower only, Crantz vi. 1. 4.

Stem a foot high. Flowers white, large, rather few. Spike short. Floral-leaves large. (Nectary curiously cloven transversely, spotted, and streaked with yellow. Floral-leaves sometimes shorter than the advanced germen. Roberts. E.)

WHITE HELLEBORINE. (*S. grandiflora*. Linn. *S. lancifolia*. Gmel. *Epipactis pallens*. Sw. Willd. Hook. E. *lancifolia*. Hoffm. De Cand. E. *grandiflora*. Sm. E.) Woods and thickets, near Stoken Church, Oxfordshire; about Marlow, and in Bedford and Buckinghamshires. Mr. Knight's walks, Wolverley, Worcestershire. Dr. Stokes. Woods near Uley. Mr. Baker. (In woods of Sir W. East, Bart. at Hall-place, near Harleyford, Berkshire. Sir J. E. Smith. Newton Wood, Derbyshire. Mr. Coke. Box Hill, and among the beeches on Ryegate Hill. Mr. Borrey. Winterslow Woods, Wiltshire. Dr. Maton. In Claverton Wood, also at Hinton Abbey, Somersetshire. Bot. Guide. Juniper Hill, Norberry Park, and Rannore Common, Surry. Mr. Winch. Appin. Capt. Carmichael. Hook. Scot. Woods about Painswick. Mr. O. Roberts. Wick Grove, Brislington, near Bristol. E.) P. May—June.

S. RUBRA. Leaves sword-shaped: flowers upright: lip of the nectary acute: (floral-leaves longer than the germen. E.)

(*E. Bot.* 437. E.)—*Fl. Dan.* 345—*Hall.* 42. ii. at p. 157—*Clus.* i. 273. 2—*Ger. Em.* 442—*Park.* 218. 8—*J. B.* iii. 517. 1—*H. Ox.* xii. 11. 5—*Ger.* 358. 3.

(*Stem* a foot high, pubescent. *Leaves* embracing the stem. *Germen* slender. E.) *Flowers* purplish red, five or six, in a loose spike.

(PURPLE HELLEBORINE. *S. rubra.* Linn. *Epipactis rubra.* Br. Sw. Willd. Sm. E.) Thickets on the sides of mountains. About Clapham and Ingleton, Yorkshire. On a steep stony bank, sloping to the south on Hampton Common, Gloucestershire. Mr. Smith. *Fl. Brit.* Mr. Woodward, in *Bot. Guide.* E.) P. June.

CYPRIPEDIUM.* *Nectary* ventricose, inflated, hollow, (petals spreading. E.)

C. CALCEOLUS. Roots fibrous: leaves egg-spear-shaped; those on the stem alternate: (upper lip oval, channelled. E.)

(*Hook. Fl. Lond.* E.)—*Hall.* 43. at ii. p. 157—*Gmel.* i. 1—*Mill.* 242—*Clus.* i. 272—*Dod.* 180. 2—*Lob. Ic.* i. 312. 2—*Ger. Em.* 443. 2—*H. Ox.* xii. 11. 14—*J. B.* iii. 518—*Dod.* 180. 1—*Ger. Em.* 443. 1—*Park.* 217. 3—*Ger.* 359—*Pet.* 70. 4.

(*Stem* upright, undivided, nine to twelve inches high, single-flowered, rarely with two. *Leaves* embracing the stem, very slightly fleshy, striated. The *Flower* terminal, nearly sessile, nutant, large, and beautiful, E.) *Petals* four, disposed crosswise, purple, slightly downy, with parallel veins; the upper broader, the two lateral ones narrower, the fourth the shortest, projecting over the opening of the lip. *Lip* curved, rounded, at the bottom, the edges contracted, (fancifully compared to a little shoe or slipper, and hence the trivial name; E.) pale yellow, marked within with deep hirsute lines. *Capsule* upright, about an inch long, somewhat prism-shaped, with three flat sides, and three ribbed angles. Woodw. scabrous. E.)

LADY'S SLIPPER. (*Calceolus Marie.* Ray. E.) Woods and thickets, rare. Woods in Lancashire; and Helk's Wood, by Ingleborough, Yorkshire. Ray. Woods about Clapham and Ingleton, Yorkshire. Hudson. Woods and hilly pastures in the neighbourhood of Kilnsay, Yorkshire. Curtis. Woods about Kilsey Crag, Wharfedale, Yorkshire. Mr. Wood. I searched for it in vain in Helk's Wood, a gardener of Ingleby having eradicated every plant. Mr. Woodward. The north branch of Castle Eden Dean, Durham. Mr. Robson. Borough Hall Park, Lancashire. Martyn. *Bot. Guide.* Castle Eden Dean; on rocks not far from the sea: a different habitat from Mr. Robson's; Mr. Winch, who states that it is not found at Warm-shades, near Keswick, as reported by Hutton. E.) P. July.†

* (From *cupis*, Venus; and *podion*, a slipper; the nectary somewhat resembling a shoe in form, and in texture being sufficiently delicate for the attire of a goddess. E.)

† (The singular structure, and peculiar elegance of this plant, render it a desirable acquisition for the flower garden; the more so since the indiscreet zeal of simplers to possess this beautiful rarity, and the ravages of certain gardeners, impelled by filthy lucre, have nearly exhausted several of its favourite haunts. It is not easily propagated, but may be increased by parting the roots, which flourish most in bog earth and decayed leaves, and should not be often removed. By the English name it would appear that the piety of Romish devotees had transferred the slipper from the heathen deity to the Virgin Mary. E.)

LEM'NA.* (*Bloss.* none: *Cal.* of one leaf: *Caps.* one-celled; a utricle. Hook. Plants minute, frondose. Grev. E.)

L. TRISUL'CA. Leaves (or fronds. E.) on leaf-stalks, spear-shaped, proliferous.

(Hook. *Fl. Lond.* 119—*E. Bot.* 926. E.)—*Mich.* 11. 5—*J. B.* iii. 766. 1—*Lob. Ic.* ii. 36. 1—*Ger. Em.* 630. 2—*Park.* 1216. 9—*Ger.* 681. 2.

(A pale green, pellucid, smooth herb, floating in fresh water, near or upon the surface, the flowers spring from a lateral chink, whose margin forms the calyx. The barren flowers, (as they were wont to be considered, E.) have two ascending white smooth stamens, each with a two-lobed yellow anther. In some an ovate superior germen stands between the stamens, bearing a simple style, with a cloven stigma. E. Bot. Few Botanists have seen the fructification of this singular plant, either at home or abroad; in the month of June, near Yarmouth, Mr. D. Turner was so fortunate as to discover it in perfection, and Mr. Graves since several times near London. E.)

(From the centre of the under side of the fronds descend fibres or radicles, which never reach to strike into the earth, but are terminated by a distinct sheath, like the calyptra of a moss. Their common mode of increase is by gemma, which are produced in marginal clefts near the base of the leaf, and there expand into perfect plants, and these again bear other fronds. The structure of the flowers is no less curious: they are likewise produced singly in a lateral cleft; a solitary pistil is mostly accompanied by two anthers, and surrounded by a membranous urceolate covering, usually considered the calyx or corolla; but Mr. Brown is satisfied that this genus belongs to the natural order of Aroideæ, and that this plant is not truly diandrous, with the stamens placed on each side the germen; and not advancing progressively; on the contrary, they are placed both on one side, both beneath the germen, and are not seen both in perfection at the same period. The receptacle is to be looked upon as a spathe, and the pistil and two anthers as so many distinct naked flowers which it produces; the whole being surrounded by a spatha (the calyx or corolla of authors). The singular economy of these minute vegetables is beautifully illustrated by the plates of Fl. Lond., Professor Hooker having had opportunities of analyzing both this and the following species in all stages of fructification. E.)

IVY-LEAVED DUCK-MEAT OR DUCK-WEED. Ditches and stagnant waters, common; (but rarely observed in flower. E.) A. June—Sept.†

L. MI'NOR. Leaves (or fronds. E.) sessile, flattish on both sides: roots solitary.

(Hook. *Fl. Lond.* 120—*E. Bot.* 1095. E.)—*Ray.* 4. 1. at p. 150—*Mich.* 11. 3, *Lenticularia*—*Vaill.* 20. 3—*Blackw.* 380—*Grev.* 336—*Trag.* 690—*Dod.* 587. 1—*Lob. Obs.* 648. 1; and *Ic.* ii. 49. 1—*Ger. Em.* 829. 1—*Park.* 1262. 1—*Ger.* 680—*Matth.* 1115—*J. B.* iii. 773. 2.

(Fronds about a line and a half long, slightly convex beneath, rather thick, succulent, and firm in texture. Increasing prodigiously by gemma, (the

* (Supposed of Greek origin, but of doubtful meaning. E.)

† (The individuals float upon the surface of the water, collected together in great masses, affording harbour for various aquatic insects, and food for ducks and other water fowl. E.)

young fronds.) Covers ditches and stagnant waters with an entire floating mass of green. The flowers are seldom to be found where the plants are in the highest state of vegetation, for scarcely have the earliest flowers disappeared, than the plants which produce them verge towards decay, and sink in a state of fructification to the bottom, where they perish, disseminating the seed, which becomes a young plant, and, as Vallinieri has observed, rises early in the next spring to the surface. Fruit exactly resembling that of *L. trisulca*. Fl. Lond. E.)

LESSER DUCK-WEED. GREEDS. (Welsh: *Bwyd hwyaid*. Irish: *Gran Lagan*. E.) In pools (common. Mr. Turner states that this and the preceding species flower regularly every year in June, in marshes at Bradwell in Suffolk. And generally near London. E.) A. June—Sept.*

L. GIBBA. Leaves (fronds, E.) sessile, hemispherical beneath: roots solitary:

(Hook, Fl. Lond. 211—E. Bot. 1233. E.)—Mich. 11. 1. 2. 3; *Lenticula*—J. B. iii. 773. 3.

(Distinguished from *L. minor* chiefly by the hemispherical, pale under-side of its frond, which is pellucid, apparently cellular, and reticulated; upper surface sometimes tinged with purple. The general character, mode of growth and fructification, resemble those of the other species. E.)

GIBBOUS DUCKWEED. *L. minor gibba* β. Huds. Ditches and ponds (comparatively rare. Ditches adjoining Rhyd Marsh, near Prestatyn, Flintshire. Mr. Griffith. E.) Lower Bishop's pool, Northwick, near Worcester, and in a pool near the east side of Malvern Chase. Stokes. (Mill-pond, near St. Nicholas Church, and in a brook in Baly's Lamas, Warwick. Perry. Lochend, Edinburgh. Greville. Found in fructification at Lewes by Mr. Borrer. E. Bot. E.) A. July—Aug.

L. POLYRRHIZA. Leaves (fronds, sessile, roundish-obovate, convex beneath: roots crowded, from one point. E.)

(E. Bot. 2458. E.)—Ray 4. 2. at p. 150—Vaill. 20. 2—Mich. 11. 1. *Lenticularia*—(Mag. Nat. Hist. v. i. p. 290. E.)

(Twice or thrice as large as the preceding species. Fronds half an inch in length, and nearly as broad, faintly striated, green above, purple beneath. E.)

GREATER DUCK-WEED. Ditches, common; (but seldom, if ever, found in flower in England. A. May—Sept.†

* (It has been observed that various kinds of mosses which grow on walls and house-tops, although dried by the heat of summer so as to become quite brittle and friable, recover their former verdure and vegetative power by the first showers of autumn. A fact analogous to this, referring to plants destined to grow in ponds which fail in dry seasons, affords a striking example of suspended animation and resuscitation, as communicated by Mr. Gough of Kendal. Some plants of *L. minor* were collected from a pond in July, 1797, dried four or five hours in the sun, and preserved in a small box, to the end of March, 1800; they were then placed in a glass jar with water, and not only revived, but flowered in the following August. Month. Mag. 1801. E.)

† (The *Lemna* generally are considered, like the freshwater *Conferve*, to possess the property of purifying the unwholesome air in marshy places, absorbing this air during the day, and exhaling oxygen during the night. Hooker. E.) Ducks and geese are fond of all the species,

SALIX.* *Catkin*, each scale containing one flower: *Bloss.* none.

Barr. Fl. A nectariferous gland at the bottom of the flower.

Fert. Fl. Style cloven: *Caps.* one cell; two valves:

Seeds downy.

(In the sixth edition of this work, availing ourselves of the elaborate researches of Hoffman, Willdenow, Smith, Crowe, and others, the *Salices* were entirely re-modelled, and the number of species doubled. In our present attempt we have endeavoured further to elucidate the obscure subject by whatever new light could be obtained. The following observations will be found worthy of the reader's attention, in reference to this tribe of plants. "*Florets* in catkins almost universally separated, being all barren on one plant, and fertile on another of the same species, without the slightest possible difference in the characters or appearance of the two individuals in any other respect." Sometimes, indeed, a barren *floret* or two occurs in a fertile *catkin*, especially among the *monandrous* species; sometimes *catkins* have been found nearly equally fertile and barren. In *S. oleifolia*, Mr. Borrer has for several years traced the progress of this mutation in the organs of impregnation, which confirms a report, whose origin does not appear, of Willows changing the nature of their blossoms, though treated as a fiction by Linnæus." So difficult has it been found to supply the extensive genus with accurate specific definitions, that Sir J. E. Smith, after having devoted much attention to the subject, and with peculiar advantages, for thirty years, has nevertheless failed to discover an arrangement perfectly satisfactory. As a general and indispensable rule for the accomplishment of this arduous task, that learned author observes: "Willows should be particularly studied in three different seasons: the flowering time; the early part of the summer, when the young shoots, with their *stipulas* and expanding foliage, are to be observed; and finally when the *leaves* are come to their full size." Eng. Fl. v. 4. p. 163.)†

* (*A saliendo*, leaping, springing upwards; as illustrative of its rapid growth; or more probably descriptive of its elasticity. E.)

† (Particulars of the economical uses of Willows, (and so important were they deemed to husbandry, that in the earlier ages they were dedicated to Ceres,) will be found under the respective species. Suffice it here to remark generally, in regard to their various appropriation, that, during the prevalence of the sanguinary rites of Druidism, human victims were enclosed in wicker-work constructed of these plants, preparatory to their being consumed by fire. From Martial we learn that the ancient Britons were so skilful in weaving Willows, that baskets, ("*bascaudas*"), and vessels by them so constructed, excited the admiration even of civilized Rome. Lib. xiv. Ep. 99; as confirmed by Juvenal,

"Adde et bascaudas."—Sat. xii. v. 46.*

The shields which so long resisted the Roman legions were also woven of the like materials, covered with hides; and of nearly similar construction were the boats of our aborigines, described by Cæsar, Pliny, and Lucan. Solinus likewise alludes to the Irish and Scotch as using boats made of wattles. From the most remote period to the present time, Willows have been connected with melancholy associations. Thus Prior:

"Afflicted Israel shall sit weeping down,
Their harps upon the neighboring willows hung,"

or with infinitely more affecting pathos, in the language of Holy Writ, "By the waters of Babylon we sat down: yea there we wept when we thought upon Zion: We hanged our harps upon the trees in the midst thereof."

SYNOPSIS OF THE SPECIES.

(1) *Leaves serrated, smooth or nearly so.*

- (1) *S. purpurea*. Decumbent; stamen one; leaves inversely egg-spear-shaped, serrated, smooth; stigmas very short, egg-shaped, nearly sessile.
2. *S. Helix*. Erect; leaves strap-spear-shaped, smooth, serrulated; flowers with one stamen; style elongated, thread-shaped; summits strap-shaped.
3. *S. Lambertiana*. Erect; stamen one; leaves egg-spear-shaped, sharp-pointed; serrated; smooth; stipulae none; stigmas very short, egg-shaped, notched.

And as invariably with the tender sentiment:

"In love the sad forsaken wight
The willow garland weareth."—Dryden.

Nor has the willow been altogether excluded from festive occasions; especially in religious observances, as a substitute for palm branches:

"And willow braunches hallow, that they palmes do use to call."—Googe.

Vergil in *Georg. ii.* thus testifies their utility:

"Willows to panting shepherds shade dispense,
To bees their honey, and to corn defence."

Most kinds are available for the occupation of marshy ground otherwise useless; and for various purposes, as the manufacture of fine charcoal, clogs, ladders, trenchers, pill-boxes, cricket-bats, hop-poles, &c., and the knife-boards made of such wood have the property of giving an edge like a stone. The Arabs distil their celebrated febrifuge caluf water from the fragrant catkins; and in Persia an esteemed perfume is obtained from the flowers. Of insects prevalent upon willows, about the roots may be discovered *Phalena (noctua) pulla*, which ascends these trees in the evening to feed upon the leaves, and returns in the morning to its subterraneous retreat, remaining the whole of the day concealed, as Curtis imagines, to avoid the attacks of ichneumons. *Ptinus tessellatus*, called the death-watch, (from its making a sound like the clicking of a watch at regular intervals, superstitiously imagined to forebode the death of some person in the house where it is heard,) snakes its way, endeavouring in this timber. *Ptinus pertinus* ravages this among other decaying wood, perforating it in every direction. Mr. Curtis (in *Linn. Tr.* v. 1.) informs us that *Phalena cossus* feeds on the wood of several species, particularly of *S. alba* and *fragilis*, proving extremely destructive; for as the larvæ are generally numerous, in the course of a few years they destroy so much of the trunk, that the first violent gale of wind blows down the tree. Willows are also infested in the same way with the larvæ of *Cerambyx moschatus*. The Entomologist will also find on or about willows, sallows, and osiers, *Lucanus parallelepipedus*, in June or July: *Coccinella guttata* (the Lady-bird), whose larvæ render essential service by clearing vegetables of *Aphides* (plant-lice), on which they feed: *Attelabus curculionoides*: *Lamia textor*: *Vanessa album*, and antiopa: *Smerinthus ocellatus*: *Andrena nigro-eruca*: *Noctua ridens*, *cubicularia*, *upsilon*, *retusa*, *angusta*, *subsetacea*, *nebulosa*, and *sparsa*: *Balaninus maculatus*: *Orchestes salicis*: *Luperus rufipes*: *Haltica aurata*: *Apatura*, *iris*: *Saturnia pavonia minor*: *Cerura vinula*: *Nomada caprea*: *Crioceris cyanella*: *Linix caprea*, and *salicis*: *Cossus ligniperda*: *Notodonta poppinus*, *zizac*: *cubicularia*, *upsilon*, and *retusa*: *Tortrix atomargana*: *Xiphodrya camelus*: *Egeria crabroniformis*: *Arctia salicis*. *Chrysomela polita*, *sericea*, and *decem-notata*: *Curculio nebulosus*: *Phalena pacta*, *citrago*, *salicella*, *pavonia*, *libatrix*, *psi*, *tayacris*, *vinula*, *bucephala*, and *monarcha*: *Papilio antiopa*, and *polychlorus*. Here may be noticed the minute vegetable, *Cryptomyces Wauchii*. *Grev. Scot. Crypt.* 206: "Sub-orbicular, olivaceous, at length nearly black, white within; theae elongated, obtuse, containing numerous sporidia." Having once attacked a branch, this apparently insignificant parasite quickly spreads all over it, so that Dr. Greville observes, "I have no doubt that a whole plantation might, in the course of a couple of seasons, be rendered good for nothing." E.)

4. *S. Forbiana*. Erect; stamen one; leaves with small leaf-scales, spear-shaped, sharp-pointed, finely toothed, smooth, glaucous beneath; stigmas strap-shaped.
5. *S. rubra*. Monadelphous; leaves strap-spear-shaped, acute, smooth, minutely toothed, green on both sides; summits ovate, undivided?
6. *S. Crowedna*. Monadelphous; leaves elliptical, slightly serrated, quite smooth, glaucous beneath.
7. *S. triandra*. Leaves linear-oblong, serrated, smooth, rather unequally sloping at the base; flowers with three stamens, (sometimes with only two. Huds.); germen stalked; stigmas sessile, bifid.
8. *S. lanceolata*. Stamens three; leaves spear-shaped, tapering towards each end, serrated, smooth; foot-stalks decurrent; germen stalked; style as long as the stigmas.
9. *S. amygdalina*. Leaves egg-spear-shaped, ovate, oblique, serrated, smooth, rounded and unequal at the base; stipule large; germen ovate, compressed, smooth, its stalk nearly as long as the scale; young branches furrowed; flowers with three stamens.
10. *S. Russelliana*. Leaves spear-shaped, sharp-pointed, tapering at each extremity, serrated, very smooth; germen on foot-stalks, awl-shaped, smooth.
11. *S. decipiens*. Leaves spear-shaped, serrated, very smooth; foot-stalks somewhat glandular; germen tapering, stalked; floral-leaves dilated and bluntish; branches smooth and highly polished.
12. *S. pentandra*. Leaves egg-spear-shaped, acute, glandulose-serrated smooth; flowers with five stamens; germen smooth, nearly sessile; stamens hairy at the base.
13. *S. nigricans*. Leaves elliptic-spear-shaped, scolloped, smooth, with a downy rib above, glaucous beneath; germen on pedicles, spear-shaped, pointed, downy.
14. *S. bicolor*. Leaves elliptical, acute, waved and slightly serrated, nearly smooth, glaucous beneath; germen stalked, spear-shaped, silky.
15. *S. petiolaris*. Leaves spear-shaped, serrated, smooth, glaucous beneath; germen stalked, egg-shaped, silky; stigma sessile, cloven.
16. *S. phylicifolia*. Leaves elliptic-lanceolate, with many serratures, smooth, glaucous beneath; stipule somewhat lunate, glandular on the inside; germen stalked, silky, style elongated.
17. *S. arbuscula*. Leaves somewhat serrated, smooth, semi-transparent, glaucous underneath; stem rather woody; catkins egg-shaped, erect; germen very silky, stalked.
18. *S. livida*. Leaves oblong, nearly entire, smooth, livid beneath; germen pedicellate, somewhat silky; stigmas somewhat sessile, two-lobed.
19. *S. vitellina*. Leaves egg-spear-shaped, acute, smooth above; serratures cartilaginous; stipule small and deciduous; stigmas notched.
20. *S. fragilis*. Leaves egg-spear-shaped; leaf-stalks toothed with glands; nectary of the male flower double.

21. *S. tenuifolia*. Leaves elliptical, acute, serrated, rather smooth, glaucous beneath; stipule small, or none; capsules very smooth.
22. *S. myrsinites*. Leaves egg-shaped, serrated, smooth, veiny; capsules awl-shaped, downy; young branches hairy.
23. *S. prunifolia*. Leaves egg-shaped, serrated, naked, smooth above, glaucous beneath; branches rather downy; capsule egg-shaped, silky.
24. *S. vaccinifolia*. Leaves egg-shaped, serrated, smooth and even above, glaucous and silky beneath; capsules egg-shaped, silky; stems decumbent.
25. *S. venulosa*. Leaves egg-shaped, serrated, naked, reticulated with prominent veins above, rather glaucous beneath; capsules elliptical, silky.
26. *S. carinata*. Leaves egg-shaped, finely toothed, smooth, minutely veined, folded so as to form a keel; capsules egg-shaped, downy.
27. *S. Dicksoniana*. Leaves elliptical, acute, slightly toothed, smooth, glaucous beneath; young branches very smooth; catkins egg-shaped, short, erect; germen silky.
28. *S. herbacea*. Leaves circular, serrated, very smooth, reticularly-veined, shining on both sides; germen stalked, ovate-lanceolate, smooth.

(2) *Leaves perfectly entire, smooth or nearly so.*

29. *S. reticulata*. Leaves elliptic-orbicular, obtuse, entire, smooth, reticularly veined, glaucous beneath; germen sessile, downy.

(3) *Leaves hairy or woolly.*

30. *S. arenaria*. Leaves nearly entire, egg-shaped, acute, reticulated and somewhat downy above, very woolly and veiny beneath; style as long as the densely woolly germen; stigma linear, deeply divided, the length of the style.
31. *S. glauca*. Leaves nearly entire, elliptic-lanceolate, even and nearly smooth above, woolly and snow-white beneath; foot-stalks decurrent; germen ovate, sessile, woolly.
32. *S. argentea*. Leaves entire, elliptical, somewhat revolute, with a recurved point, rather downy above, silky and shining beneath, as are the branches.
33. *S. prostrata*. Leaves elliptic oblong, convex, rarely toothed, with a recurved point, glaucous, veiny and silky beneath; stem prostrate; stipule minute; style shorter than the stigma.
34. *S. fusca*. Leaves elliptic oblong, acute, straight, flat, with a few glandular teeth, glaucous and silky beneath; foot-stalks slender; stem erect, much branched; stipule none.
35. *S. fatida*. Leaves elliptical, nearly entire, with a recurved point, glaucous and silky beneath; stem recumbent; germen ovate-lanceolate, on a silky stalk nearly equal to the obovate scale.
36. *S. repens*. Leaves egg-spear-shaped, somewhat pointed, smooth above, silky underneath, very entire; stem depressed.

37. *S. rosmarinifolia*. Erect; leaves strap-spear-shaped, pointed, straight, entire, silky beneath; catkins ovate, recurved; germen stalked, lanceolate, silky.
38. *S. cinerea*. Stem erect; lower leaves entire, inversely-egg-spear-shaped, underneath reticulated with veins, glaucous, downy: stipulæ half-heart-shaped, serrated; germen silky, its stalk half as long as the lanceolate scales.
39. *S. aurita*. Branches trailing; leaves somewhat serrated, convex, obovate, obtuse, with a small hooked point, hairy and reticulated with veins on both sides; stipulæ roundish, convex, toothed; germen silky, stalked; stigmas nearly sessile.
40. *S. aquatica*. Leaves slightly serrated, oblong-egg-shaped, flat, somewhat woolly underneath: stipulæ rounded, toothed.
41. *S. oleifolia*. Leaves inversely egg-spear-shaped, flat, minutely indented, acute, underneath glaucous and hairy; stipulæ small, notched.
42. *S. continifolia*. Leaves elliptical, almost circular, slightly toothed, downy, and marked with rectangular veins beneath; stigmas cloven.
43. *S. lanata*. Leaves roundish-ovate, pointed, shaggy on both sides, glaucous beneath; germen sessile, oblong, smooth; style four times as long as the blunt, divided stigmas.
44. *S. caprea*. Leaves egg-shaped, wrinkled, cottony underneath, waved, toothed towards the end; capsules swelling.
45. *S. acuminata*. Leaves lanceolate oblong, pointed, waved, slightly toothed, tomentous beneath; stipulæ kidney-shaped; capsule ovate, tapering.
46. *S. stipularis*. Leaves spear-shaped, pointed, bluntly scalloped, underneath downy; stipulæ half-heart-shaped, very large; nectary cylindrical.
47. *S. viminalis*. Leaves spear-strap-shaped, very long, acute, white, and silky underneath; branches rod-like; style elongated; germen sessile.
48. *S. alba*. Leaves spear-shaped, tapering to a point, serrated, downy on both sides, the lowermost serratures glandular; stigmas deeply cloven.
49. *S. hirta*. Leaves elliptic-heart-shaped, pointed, finely notched, downy on both sides; stipulæ half-heart-shaped, flat, toothed, nearly smooth; branches hairy.
50. *S. rupestris*. Leaves inversely egg-shaped, serrated, flat, even, silky on both sides: stipulæ hairy: branches minutely downy: germen stalked, awl-shaped, silky; stigmas undivided.
51. *S. sphacelata*. Stem erect; leaves entire, elliptical, flat, downy on both sides, somewhat withered at the point; stipulæ half-heart-shaped, toothed, erect; capsule tapering.
52. *S. Smithiana*. Leaves lanceolate pointed; slightly wavy, minutely toothed; soft and scarce visibly downy above, whitish and silky beneath; stipulæ crescent-shaped, minute; catkins ovate; germen stalked; style shorter than the linear, deeply divided stigmas. E.)

(1) *Leaves smooth, serrated.*

- (1. *S. PURPUREA*. Monandrous; decumbent; leaves inversely-egg-spear-shaped, serrated, smooth: stigmas very short, egg-shaped, nearly sessile.

E. Bot. 1868.

A shrub three or four feet high. It differs from *S. Helix* in its spreading, decumbent habit, never growing up into a tree; the rich purple of its branches, and the somewhat deeper hue of its leaves, and especially by having much more small and slender catkins, a more elliptical germen, and small, egg-shaped, obtuse, nearly sessile stigmas. Leaves sometimes opposite. Floral-scales small, blunt, and black. Bark very bitter. Fl. Brit. and *E. Bot.*

BITTER PURPLE WILLOW. *S. purpurea* of Linn. hitherto confounded with *S. Helix*, but a much rarer plant. In marshes and by the sides of rivers. In King-street meadows, Norwich. Mr. Crowe; now scarcely to be found there. Smith. Peakirk and Thurnby, Northamptonshire; and between Vauxhall and Nine Elms, by the Thames side. Martyn. About Beverley. Teesdale. N. bank of the Tweed, opposite Melrose. Hook. Scot. S. March. E.)*

2. *S. HELIX*. Monandrous, erect; leaves strap-spear-shaped, smooth, serrulated: (style elongated, thread-shaped: summits strap-shaped. Fl. Brit. E.)

(*E. Bot.* 1343—*Curt. E.*)—*Hoffm. Sal.* 1. and 5. 1—*Fuchs.* 334—*Ger. Em.* 1389.

(Twigs very smooth and polished, pale yellowish or purplish ash-colour. Leaves opposite or alternate on the same plant; the former is a rare circumstance in this genus. Fruit-stalks short. Stipule none. A distinguishing character is the leaf being much drawn out towards the base into a strap shape. A little pubescence on the youngest leaves only, the older are quite smooth, of a light, rather glaucous green. Barren Catkins an inch long, of shortish stalks. Scales concave tipped with black. Nectary oblong, entire. Stamen with a four-lobed anther. Fertile Catkins thicker and with broader scales. Germen sessile, ovate, silky. Style very perceptibly projecting, smooth, with linear, at length, cloven, stigmas.

S. purpurea, which Hoffman and Curtis confound with this, is a much rarer plant. *E. Bot.* (Hooker is inclined to consider them the same. E.)

ROSE WILLOW. (Welsh: *Helygen gyferbynddail*. E.) *S. Helix*. Linn. *S. monandra*. With. Ed. 4. Hedges, watery places, and sides of rivers, osier beds, frequent. E.) S. April—May.†

* (A very valuable osier for fine basket-work, but more especially for plating into low close fences, to keep out hares and rabbits, the leaves and bark being so intensely bitter that those animals will not touch either. The twigs are so long, tough, and flexible, that they may be interwoven into any shape. Sm. E.)

† Baskets, cradles, bird cages, and all sort of twig work, are made of its long, slender, and flexible shoots. (In consequence of the deposition of the eggs of a *Cynips* in the ex-

3. *S. LAMBERTIANA*. Erect: monandrous: leaves egg-spear-shaped, sharp-pointed, serrated, smooth: stipulæ none: stigmas very short, egg-shaped, notched.

E. Bot. 1359.

Much resembles *S. Helix* and *Forbiana*, (of which Prof. Hooker deems it only a slight var.) but differs essentially in having *catkins* not more than half so large and thick, and especially in its *stigmas*, which are short, egg-shaped, notched, and nearly sessile. The young growing branches and leaves are much like those of a honeysuckle in their glaucous hue, with a purplish tinge in their upper part, which is more or less downy. *Leaves* of a broad figure, dilated above the middle, half as long as those of *S. Forbiana*, and broader as well as shorter than those of *S. Helix*. *Fl. Brit. and E. Bot.*

BOYTON WILLOW. Banks of streams, common. On the banks of the Willy, at Boyton, Wiltshire; in osier-holts near Staines. Mr. Lambert. About Eachford Bridge, near Icklingham, Suffolk. Mr. Crowe. About Ham ponds, near Sandwich. Mr. Woods, jun., and about Lewes. Mr. Borrer. *Bot. Guide.* Salford, and Wixford, near Alcester: Badsey, Worcestershire. Purton. Banks of the Esk, above Musselburgh. Hook Scot. P. March—April. *E.**)

4. *S. (FORBIA) NA*. Monandrous; erect; leaves with small leaf-scales,

trernity of the twigs, numerous leaves shoot out, differing in shape from the other leaves of the tree, and arranged not much unlike those composing the flower of a rose, adhering to the stem even after the others fall off. A similar process occasions the red, carbunculous protuberances frequently observable on the leaves. No productions of nature seem to have puzzled the ancient philosophers more than the vegetable excrescences and galls. Their conjectures of the causes were most vague; and even now that it is better understood, how the mere insertion of an egg into the substance of a leaf or twig, even if accompanied, as some imagine, by a peculiar fluid, should cause the growth of such singular protuberances around it, may be as difficult to explain as why the insertion of a particle of variolous matter beneath the human skin should cover it with pustules. In both cases the effects seem to proceed from some action of the foreign substance upon the secreting vessels of the animal or vegetable; but of the nature of this action we know nothing. Thus much is ascertained by the observations of Reaumur and Malpighi, that the production of the gall, which, however large, attains its full size in a day or two, is caused by the egg or some accompanying fluid; not by the larva, which does not appear until the gall is fully formed; that the galls which spring from leaves almost constantly take their origin from nerves; and that the egg, at the same time that it causes the growth of the gall, itself derives nourishment from the substance that surrounds it, becoming considerably larger before it is hatched than it was when first deposited. When chemically analyzed, galls are found to contain only the same principles as the plant from which they spring, but in a more concentrated state. The majority of galls are what Entomologists have denominated monothalamous, or consisting of only one chamber or cell, but some are polythalamous, or consisting of several. See Kirby and Spence's *Entomology*, and Phillips's *Sylva Florifera*, for an interesting account of the nidus, and metamorphoses of these insects; also *Rosa* and *Quercus* in this work. We would here farther remark, that neither the obscurity of the recess, nor the thickness of the incrustation, can protect these little creatures from the formidable *Ichneumon (glomeratus)*, who, though to them a destroying angel, by an eternal war reducing the exuberant fecundity of these tribes, seems commissioned as a benefactor to mankind. *E.*)

• (Scarcely inferior to *S. Forbiana* for basket work, and much more common. *E.*)

spear-shaped, sharp-pointed, finely toothed, smooth, glaucous beneath: *stigmas strap-shaped*.

E. Bot. 1344. . .

Stamen not cloven, but simple as in *S. Helix*. *Leaves* alternate, rarely almost opposite, truly spear-shaped, pointed, of a darker green above, and more thickly toothed or serrated than in *S. Helix*; glaucous beneath. *Leaf-scales* small, spear-shaped, sharp pointed, often wanting. *Catkins* sessile, so very like as scarcely to be distinguished from *S. Helix*, but the leaves are sufficiently distinct.

FINE BASKET OSIER. (*S. fiss.* Relh. not of Hoffm.) Fincham, Norfolk. Rev. J. Forby. Frequent in Cambridgeshire. In osier-grounds near Lynn. Mr. Crowe. S. April. Fl. Brit. and *E. Bot.* E.)*

5. *S. RU'BRA*. Monadelphous: leaves strap-spear-shaped, acute, smooth, minutely toothed, green on both sides; summits ovate, undivided.

(*E. Bot.* 1145. E.)

Branches greenish, tending to red. *Leaves* like those of *S. viminalis*, but wholly green; (alternate, on short foot-stalks, three or four inches long, the young ones only slightly downy. E.) *Buds* reddish. *Catkins* at first red, afterwards greenish yellow. Ray. *Fertile Catkins* not an inch long, obtuse. *Germs* sessile, silky, with a very short style, and ovate thick stigmas. *E. Bot.* E.)

RED WILLOW. (Welsh: *Helygen werdd.* E.) Willow beds, but not common. Osier holt between Maidenhead and Windsor, on the side of the river near Salisbury. (Between Prickwillow and Ely, also at Icklingham, Suffolk. Rev. Mr. Hemsted. *E. Bot.* Near Bedford. Rev. Dr. Abbot. *Bot. Guide.* Just out of Kent-street, London, on the Dover-road, and osier-grounds at Newington. Mr. J. Woods, jun. ditto. About Newcastle, Northumberland. Mr. Winch. In a plantation near Treffos, Anglesey. Welsh *Bot.* E.) T. April—May.†

6. *S. CROWEANA*. Monadelphous; leaves elliptical, slightly serrated, quite smooth; glaucous beneath.

E. Bot. 1146.

A small irregularly growing tree, with short, brittle, yellow or purplish divaricated branches. *Leaves* alternate, on broad stalks, spreading, hardly an inch and half long, somewhat inversely-egg-shaped, acute; points in maturity reflexed and often split. *Barren Catkins* egg-shaped, short, of a bright yellow when young. *Scales* egg-shaped, hairy, tipped with black. *Filaments* more or less united at their base. *Anthems* orange-coloured. *Fertile Catkins* not yet observed. Fl. Brit. *E. Bot.*

BROAD-LEAVED MONADELPHOUS WILLOW. The only willow with united stamens and broad-leaves. Discovered by James Crowe, Esq. F.L.S. growing in several parts of Norfolk. The fertile plant in Weardale, at Bartreeford; Mr. Winch. And near Egerton, Teesdale, Durham. Rev. J. Harriman. (Mr. Winch considers the banks of subalpine rivulets in

* (Highly valuable as an osier for the finer kinds of basket work. E.)

† The twigs are much sought after by basket makers, gardeners, &c. Ray.

the N. of England, as the true locality of this species. E.) Cranberry Fens, Norfolk. Mr. Crowe. Glen Nevis. Mr. Borrer. Hook. Scot. Barren plants near Cambo, Northumberland. Rev. J. Fenwick.

T. April—May. E.)*

7. *S. TRIANDRA*. (Triandrous leaves: linear-oblong, serrated, smooth, rather unequally sloping at the base: germens stalked: stigmas sessile, bifid.

(*E. Bot.* 1435. E.)—*Gmel.* 1. 34. 3.

(When not injured, rising to the height of thirty feet: towards autumn casting its bark, cracking angularly like the plane-tree. *Leaves* always perfectly smooth, numerous, scattered, stalked, three or four inches long, and an inch broad, linear-oblong, being contracted at each end only for scarcely more than half an inch, at the extremity into a taper-point; at the base into a somewhat unequal, rounded, but not ovate shape; their margin copiously beset with rounded, glandular teeth, or serratures; upper surface bright green; under pale, or slightly glaucous; their fine slender veins interbranching towards the edges. *Catkins* solitary, at the ends of short, lateral, leafy branches, which in summer are axillary. Sm. E.)

TRIANDROUS WILLOW. SMOOTH WILLOW. (Welsh: *Helygen deirgurryw hirddail*. *S. triandra*. Linn. E.) Woods, hedges, banks of rivers, and osier-grounds. May—Aug.†

(*S. Hoffmannia* na. Sm. nearly resembles the preceding, and has often been described as the same. It is said not to attain more than half the height of *S. triandra*, to have leaves ovate-oblong, rather than linear-oblong, and slightly rounded at the base. *S. triandra*. Hoffm. represented in his *Sal.* v. 1. t. 9, 10. t. 23. f. 2. E.)

8. *S. LANCEOLATA*. Triandrous; leaves spear-shaped, tapering towards each end, serrated, smooth: foot-stalks decurrent: germen stalked: style as long as the stigmas.

E. Bot. 1436.

A small tree, distinguished by its long tapering leaves and leaf-scales, and by the base of the foot-stalk running down remarkably along the branch. The leaves have often a small pair of leaflets at their base. Occasionally casting its bark.

SHARP-LEAVED TRIANDROUS WILLOW. Growing wild in Sussex. About Lewes. Mr. Borrer. And probably not uncommon elsewhere. In Angushire. Mr. G. Don. †F. April—May. E. Bot. E.)‡

9. *S. AMYGDALINA*. Triandrous: leaves egg-spear-shaped, ovate, oblique, serrated, smooth; rounded and unequal at the base:

* (Of no use as an osier. E.)

† (The narrow-leaved willows generally come under the denomination of osiers, of which this is one of the most valuable. It is cultivated for white basket work, producing rods eight or nine feet long, tough and pliant, even when stripped of their bark, and very durable. They are cut down every year. Sm. E.) The bark, in doses of one or two drams, will cure agues. *Med. Com.* v. 298.

‡ (The rods when peeled are apt to split in working, but they are common in brown hampers and crates, and might probably prove suitable for the manufacture of willow bonnets. E.)

stipule large; ~~germen~~ ovate, compressed, smooth, its stalk nearly as long as the scale; young branches furrowed. E.)

(E. Bot. 1936. E.)—Park. 1430. 5—J. B. i. b. 215. 1.

This species will, if allowed to grow, form a small and handsome tree. It is characterized by remarkably furrowed young branches; large, round, crenate stipules; and broad, oblique leaves, rounded at the base, not sloped off as in *S. triandra*. The catkins terminate small lateral branches, and are cylindrical, with rounded slightly hairy scales; the barren flowers are yellow, with three stamens; fertile ones greener. Capsule stalked, egg-shaped, compressed, smooth. E. Bot. Bark deciduous. Scarcely to be distinguished from *S. triandra*. Linn. Curt. Hook. E.)

ALMOND-LEAVED WILLOW. Willow-beds and banks of rivers. (Sussex and Norfolk. Common about Blandford. 'Pulteney.' Hedges near Gilsland, and in Heaton Dean, Durham. Near Chester-le-Street, New Bridge, Beamish, and on the banks of Derwent. Mr. Winch. E.) At the foot of Box Hill, near Dorking. Mr. J. Woods, jun. Bot. Guide.

S. April, May, likewise in Aug. Dill.*

(10. *S. RUSSELLIANA*. Leaves spear-shaped, sharp-pointed, tapering at each extremity, serrated, very smooth; germens on foot-stalks, awl-shaped, smooth.

Pl. XXXIV. — E. Bot. 1808.

This plant has often been mistaken for *S. fragilis* (of very inferior value) till the Duke of Bedford discovered the error; but the whole hue of *S. Russelliana* is lighter, especially the leaves, which are also more firm, and narrower, tapering at the base, and not rounded, or ovate; their serratures are more coarse and irregular, mid-rib much stouter. Glands of the foot-stalks sometimes become leaflets. Germen longer than the scale, more tapering and awl-shaped than in *S. fragilis*, with a longer stalk and style. The barren plant has not yet been described. Fl. Brit. and E. Bot.

BEDFORD WILLOW. ~~LEICESTERSHIRE~~ OR DISLEY WILLOW. By the first mile stone from Cambridge, on the London road. Relham. Osier-grounds at Stoke Newington, near London. Found throughout the midland and southern counties, in marshes and willow-beds. known in Ireland by the name of *Gorgomel Sallow*, as the Bishop of Droimore informs the Rev. S. Dickenson. It is not indigenous there, but had been brought from Holland; and Mr. Dickenson suspects that ours was originally introduced from the same country by cuttings, as only fertile plants are found here. On the banks of Tees, Durham. Rev. J. Harriman. Winch. Guide. About Newcastle, Northumberland. Mr. Winch. Not uncommon in Anglesey. Welsh Bot. Near Edinburgh. Hooker.

T. April—May. E.)†

* (An inferior kind of osier; but Mr. Woolgar, of Ewes, mentions it as valued and long cultivated thereabouts, producing a good crop of rods six or eight feet long for many successive years. E. Bot. E.)

† (The late and present Duke of Bedford have taken much pains to ascertain and bring into notice the valuable properties of this willow. The bark is excellent for the purposes of tanning. The experiments of Sir H. Davy prove, that it contains at least as large a quantity of the tanning principle as either oak or larch. Under the erroneous name of *S. fragilis*, the bark has been recommended for the cure of agues. See Med.



- (11. *S. DECIP'IENTS*. Leaves spear-shaped, serrated, very smooth: foot-stalks somewhat glandular: germens tapering, stalked: floral-leaves dilated, and bluntish: branches smooth and highly polished.

E. Bot. 1937—*Hoffm. Sal. v. 2. 9. t. 31.*

Bark of the last year's shoots very smooth and shining, light reddish brown or clay-colour, appearing as if varnished. *Young twigs* often stained beautifully with crimson. *Leaves* resembling those of *S. Russ. liana*, but smaller, and those on the short flowering branches remarkably different, being obtuse, nearly obovate, and recurved, except only the upper one. *Stamens* two, rarely three. *Nectary* in the barren plant double. *Germens* stalked, tapering, smooth. *Scales* all elliptic-oblong, hairy. *E. Bot.*

WHITE WELSH OR VARNISHED WILLOW. Observed wild by Mr. T. F. Forster, near Tunbridge; in Northumberland and Durham by Mr. Winch; by Mr. Woolgar in moist hedges about Lewes; and by Mr. Crowe in cultivated osier-grounds in Norfolk and Cambridgeshire: Osier-beds in Barrow-Hill, near Dudley. Rev. W. T. Bree in Part. Collington Woods, Edinburgh. Hooker. A small tree. May. E.)*

12. *S. PENTAND'RA*. Pentandrous: leaves egg-spear-shaped, acute, glandulose-serrated: (germens smooth, nearly sessile; stamens hairy at the base. E.)

Dick's. H. S.—(*E. Bot.* 1805. E.)—*Gmel. i. 34. 1—Fl. Lapp. 8. z. a leaf only.*

From six to ten feet high, or more. *Branches* yellowish purple, smooth, shining. *Leaves* glossy, in hot weather exhaling an odoriferous perfume from the marginal glands. (A handsome plant, readily known by its broad, bright, very shining leaves, and its broad sterile catkins, with numerous crowded yellow stamens. Hook. E.)

SWEET BAY-LEAVED WILLOW. (Welsh: *Helygen beraroglaidd*. E.) Moist woods, hedges, and sides of rivers. Common about Kendal. Mr. Gough. In the north of England, and Coomb Wood, Surry. About

Com. v. 298. The Rev. S. Dickenson, Rector of Blymhill, has furnished me with specimens, accompanied by the following remarks:—"Of this estimable tree only fertile plants occur in Britain: from rapidity of growth and the extraordinary bulk to which it attains, this is one of the most profitable to plant of the willow kind. In less than thirty years from planting the cuttings, I have experienced that it will afford a considerable quantity of very useful boards for various purposes. Being of excellent cleft, it is convertible, at a light expence, into hurdle bars, and is cultivated for that purpose by some agriculturists in this neighbourhood, particularly where large flocks of sheep are depastured upon turnip soils. In Worcestershire it is in great estimation for hop poles. The celebrated willow, near Lichfield, which goes by the name of the *Johnson Willow*, (not that it was planted by the sage, but that he delighted to repose under its shade,) proves to be *S. Russelliana*." In consequence of this information, the Editor paid a visit to the far-famed willow, which is situated by the foot-path leading direct from the Minster to Stowe. The magnitude of this tree is surprising, especially when the general character of its congeners is considered. The trunk at six feet above the ground measures twenty-one feet in girth, and extends twenty feet in height of that vast size before dividing into enormous ramifications. The whole trunk, thus comprising about 130 feet of solid timber, continues perfectly sound, and the very extensive head shows unimpaired vigour. A younger plant, (though a full sized tree,) in the adjoining meadow, promises to sustain the reputation of its sire. E.)

* (Produces good rods for basket work while young. E.)

Kilnsay and Carr End, Wensledale, where it is the most common species. **Curtis**. Near Bungay, frequent. **Mr. Woodward**. On the side of a wet ditch, on the outside of some gardens without the East Gate, **Stafford. Stokes**. Plantations at Soho, **Birmingham**. (Woods about **Stayley Hall and Common, Cheshire**. **Mr. Bradbury**. Bot. Guide. **Tyne Head**, many places at **Alston, Graystock, Abbey Holm, &c. Cumberland**. **Hutchinson**. **Pockerley, near Beamish**. **Mr. Winch**. Near **West Boldon and Cleadon, Durham**. **Mr. Thornhill**. Bot. Guide. **Chelsea**, in the way to **Fulham**. **Martyn**. Near **Little Caw Lake, Northumberland**; **Newlands, Cumberland**. **Mr. Winch**. In **Lewes willow beds**, and near **Worthing**. **Mr. Borrer**. **Binley, near Coventry**; on the banks of the **Avon, near Holbrook Grange**. **Bree in Purt**. In **Berw Marsh, Anglesey**. **Welsh Bot**. Banks of the **Esk**, and water of **Leith**. **Greville**. Frequent in **Westmoreland**; about **Leeds, Bingley, and Otley**; banks of the **Ure at Rippon**. **E.**) **S. April—July.***

- (13. **S. NIGRICANS**. Leaves elliptic-spear-shaped, scolloped, smooth, with a downy rib above, glaucous beneath; germens on pedicles, spear-shaped, pointed, downy. *

E. Bot. 1213.

This willow scarcely forms a tree. Branches straightish, cylindrical, brittle, dark-coloured, smooth; the young ones downy. Leaves two or three inches long, elliptic-spear-shaped, acute, scarcely rounded at the base, crenate in every part; dark green and smooth above, turning black when dried; beneath glaucous, veiny, sometimes a little downy. *Stipulas* (if any) large, obliquely-heart-shaped, serrated, smooth. *Catkins* yellow, an inch or more in length, thick and blunt, their scales inversely egg-shaped, narrow, brown in their upper half, hairy. *Stamens* two, distinct, hairy below.

DARK BROAD-LEAVED WILLOW. **Linn. Tr. Fl. Brit. and E. Bot.** The fertile plants of this species do not appear yet to have fallen under observation in this country; even those named in **Linn. T. Smith** imagines to be erroneously so called. The barren plant has been remarked growing at **Wrongay Fen, Norfolk**, by **Mr. Crowe**, and in osier grounds in many places. 'Foot of **Boxhill**. **Mr. J. Woods, jun.** Bot. Guide. **Craigcrook, Edinburgh**. **Maughan**, in **Grev. Edin.** **P. April—May.)**

- (14. **S. BICOLOR**. Leaves elliptical, acute, waved and slightly serrated, nearly smooth, glaucous beneath: germen stalked, spear-shaped, silky.

E. Bot. 1806.

Much resembling the preceding species, though truly distinct, (some authorities question this. **E.**) Grows in an upright wand-like form when young, and is known by its dark, mahogany-coloured stems, and the upright, stiff position of its leaves. If neglected, it forms a small tree. Leaves large, dark shining green above, glaucous beneath. *Stipulas* small, half-heart-shaped, serrated. Foot-stalks broad at the base. Fertile *Catkins* an inch long when in full flower, but afterwards twice as long. Scales rounded, very hairy. Style short. *Stigmas* roundish, notched.

* The wood crackles greatly in the fire. The branches are cut to make springles. Sheep and goats eat it. The leaves dried afford a yellow dye. **Linn.** Much used in **Yorkshire** for making the larger sort of baskets. **Curt.** (The down of this species is employed as a substitute for cotton in stuffing mattresses, cushions, &c.; and, mixed with a third part of cotton, makes good candle-wicks. **E.**)

Barren Catkins only half the size of those of *S. nigricans*. *Stamens* much shorter, perfectly smooth, not hairy at their base. *Leaves* also, of a brighter green, their margin inclined to be revolute, and rather toothed than crenate. *Germens* shorter, blunter, and less tapering. The branches are not endowed with much flexibility or toughness. Linn. Tr. v. 6. Fl. Brit. and E. Bot.

SHINING DARA-GEILIN WILLOW. *S. laurina* of Sm. Linn. Tr. *S. bicolor* of Ehrh. and Fl. Brit. In willow-beds and other marshy situations. Not uncommon in woods in Norfolk. Mr. Crowe. (On the banks of Wear, near Lumley Castle Durham. Winch. E.) S. T. April—May. E.)

- (15. *S. PETIOLARIS*. Leaves spear-shaped, serrated, smooth, glaucous beneath: germen stalked, egg-shaped, silky: stigmas sessile, cloven.

E. Bot. 1147.

Fertile plants only known. A small spreading tree. Branches slender, flexible, round, smooth, more or less purple or brown. Leaves four or five inches long, almost an inch broad when full grown, and generally unequal at the base. Foot-stalks remarkably strong and slender. Stipulas small, lanceolate, smooth, toothed. Fertile Catkins scarcely an inch long, on stalks. Scales small, obtuse, often notched, black and hairy. The very young leaves are tinged with an elegant ferruginous hue.

Fl. Brit. and E. Bot.

DARK LONG-LEAVED WILLOW. (Possil Marsh, north side of the canal. Mr. D. Don. Marshes, Angus-shire. Mr. G. Don. Hook. Scot. E.

T. April. E.)

- (10. *S. PHYLLICIFOLIA*. Leaves elliptic-lanceolate, with many, often wavy, serratures, smooth, glaucous beneath: stipulæ somewhat lanceolate, glandular on the inside: germen stalked, silky: style elongated.

E. Bot. 1958—Fl. Lapp. t. 8. f. d. n. 351.

Branches spreading and decumbent, taking root on all sides. Young twigs purplish or brown. Leaves scattered, not much spreading, two inches long, smooth, harsh, bitter, upper side dark and shining. Catkins from separate buds, stalked, cylindrical. Scales strap-shaped, silky at the back. Style smooth. Stigmas small, cloven. E. Bot.

TEA-LEAVED WILLOW. Highlands of Scotland. At Finlanrig, Breadalbane. Rev. Dr. Stuart. Fl. Brit. Prestwick Carr, Northumberland. Mr. Winch. The real *S. phyllcifolia* of Linnaeus, now ascertained to be such by Sir J. E. Smith, also described in Fl. Brit. as *S. radicans*, not *S. phyllcifolia* of Jacq. S. T. May. E.)

- (*S. Borreriana*. Leaves lanceolate, with shallow even serratures, very smooth; glaucous beneath. Stipulas obsolete. Branches upright. Scales of the catkin acute, shaggy.

A bushy shrub eight or ten feet high, found in Breadalbane and Glen Nevis, by Mr. W. Borrer—considered distinct from other British species by Smith. E. S. T. May. E.)

- (*S. nitens*. Leaves elliptical, acute, unequally serrated; very smooth and laucous beneath; minutely downy, with a downy mid-rib above. Stipulas obsolete. Branches spreading. Catkins pearly sessile, with acute, shaggy scales.

A bushy shrub, ten or twelve feet high, with branches dark brown or

purplish. Much resembling *S. phylicifolia*. Brought from Scotland by the late Mr. G. Anderson. Sm. E.)

- (17. *S. ARBUSCULA*. Leaves spear-shaped, somewhat serrated, smooth, semi-transparent, glaucous underneath: stem rather woody: germens very silky, stalked: (catkins egg-shaped, erect. E. Bot. E.)

E. Bot. 1386—*Fl. Lapp. t. 8. f. c. and m. leaves only.*

Edges of some leaves smooth, and others serrated on the same plant. (Stem erect, slender, about one foot high, naked below like a little tree. Leaves on very short stalks, spear-shaped, varying in breadth, flat, finely veined; when young silky, but afterwards quite smooth above and nearly so below. *Stipules* none, except sometimes on very luxuriant radical shoots, where they are small, lanceolate, flat. On such shoots the leaves become quite ovate and very broad. *Catkins* lateral, nearly sessile, erect, egg-shaped, short. *Scales* oblong, notched, purplish, hairy. *Germens* silky, egg-spear-shaped, on a short stalk. *Stigmas* broad, egg-shaped, tawny, with a very short style. E. Bot. E.)

LITTLE TREE WILLOW. First discovered in Scotland by Dr. Walker, and lately found on the banks of the river Isla in Angus-shire, and at the foot of Ben Lawers by Mr. Brown. Banks of the Nith, twenty miles above Dumfries. Maughan, in Hook. Scot. P. April. E.)

18. *S. LIVIDA*. Leaves oblong, nearly entire, smooth, livid beneath; germens pedicellate, somewhat silky; stigmas nearly sessile, two lobed.

Wahl. Lapp. t. 16. f. 6.

Glabrous every where, and even shining; about one foot high; branches divergent, almost deflexed, brownish. Leaves oblongo-rhomboid, broader upwards, acuminate at each extremity, livid rather than glaucous beneath. Scales not so long as the pedicel, shortly pubescent. Wahlburg.

LIVID DWARF WILLOW. Lowlands of Scotland. Dr. Hooker. At the foot of Benfall, near Moffat. Mr. Maughan. Hook. Scot. S. E.)

19. *S. VITELLINA*. Leaves egg-spear-shaped, acute, smooth above: serratures cartilaginous: (leaf-scales small and deciduous: stigmas notched. E. Bot. E.)

(E. Bot. 1389. E.)—*Hoffm. Sal. i. 11 and 12; foliage 24. 1—Munt. 12—Fuchs. 335.*

A middle sized tree; much branched at the top. Branches upright, (remarkably yellow. E.) Bark of the tree grey, inclined to crack, cinnamon-coloured within, bitter and astringent. The Fertile Plants when left to themselves, have pendent branches, but when lopped, stiff and straight. Barren Catkins at first upright, afterwards reflexed; cylindrical, slender, serpentine, two inches long, or more; on fruit-stalks half an inch long. Stamens two. Nectaries two. Fertile Catkins two or three inches long, on fruit-stalks one to one inch and a half long. Leaves alternate, upright, slightly serrated; mid-rib yellowish; about three inches long and one broad, but always broader in the fertile plant. Hoffm.

YELLOW WILLOW. GOLDEN OSIER. (Welsh: *Merhelygen*. E.) Osier bolts frequent. (Mr. Crowe observed it abundant and certainly native in

rough, low pastures, near Watton, Norfolk. Smith. Queen's College Grove, Cambridge. Relhan. Banks of the Tean and Tyne, Northumberland, Durham. Mr. Winch. At Stoke Newington, Middlesex. Mr. J. Woods, jun. ditto. Thurnby, and Sir J. Shaw's Decoy, Northamptonshire. Moreton. Near Henley, Oxon. Sibthorpe. (Banks of Clyde, frequent. Hopkirk. Near Dumbarton, fertile plant. Maughan. Hook. Scot. E.) T. May.*

20. *S. FRA'GILIS*. Leaves egg-spear-shaped: leaf-stalks toothed, glandular: (nectary of the barren flower double. Fl. Brit. Germen ovate, nearly sessile. E.)

(*E. Bot.* 1807. E.)—*Woodv.* 198—*Hunt. Evel.* 245. i. p. 238. ed. ii.—*Fl. Lapp.* 8. 6. a leaf only.

A tall tree. The branches so fragile as to break if even slightly struck. Fruit-stalks with two or three leaves at the base, often deciduous. (Leaves very smooth. Barren Flowers with an abortive germen. The tree remarkable for the oblique position of its branches. *E. Bot.* E.)

CRACK WILLOW. (Welsh: *Helygen frau.* E.) Woods, hedges, and banks of rivers. Near Shottisham, Norfolk. Mr. Crowe. (At Trejorwerth, Dinam, &c. in Anglesey. Welsh Bot. At Mill-bank, Westminster. *E. Bot.* E.) T: April—May.†

- (21. *S. TENUIFO'LIA*. Leaves elliptical, acute, serrated, rather smooth, glaucous beneath: stipulæ small or none: capsules very smooth, Fl. Brit.

E. Bot. 2186—*Fl. Lapp.* t. 8. f. c.

From one to two feet high, very much branched and spreading. Branches reddish; the younger ones pubescent, with very short down, and bent inwards. Leaves elliptical, rather pointed, slightly serrated, besprinkled when young with fine close-pressed hairs; bright green above; glaucous and whitish beneath, reticulated with veins; the rib sometimes hairy. Barren Catkins yellowish, an inch long, with very hairy scales. Stamens two. In the wild fertile shrub the catkins are finally an inch and a half long, with egg-spear-shaped, smooth, sessile capsules, a long style, and rather thick, notched stigmas. Pubescence variable. Fl. Brit. and *E. Bot.*

* The shoots are used by crate and basket makers. The wood is white, and very tough. (One of the most ornamental of Willows, even in winter, when its golden branches materially enliven the sombre aspect of shrubberies. Like *S. aquatica*, this, and several other species, may, during a scarcity of reeds, be converted to the use of the paper maker. At Turin the fabrication of paper, both for writing, printing, and wrapping, from the thin bark of willows and poplar trees, has been fully approved and sanctioned by the Academy of Sciences. E.)

† It will thrive in most kinds of soil, if they be sufficiently moist. It is a quick grower, and bears cropping. The White Satin Moth sometimes devours all its leaves. (*S. viminalis*, *triandra*, and *fragilis*, are particularly subject to the depredations of *Aphis Salicis*, one of the largest English species, which infests both trunks and branches. "The bodies of these insects contain a red liquor, and hence persons employed in stripping osiers have their hands rendered apparently bloody by unavoidably bruising them." See Curtis in Linn. Tr. v. 6. where many curious particulars may be learnt. The reputation the bark of this Willow has obtained for the cure of agues, should rather be transferred to *S. Russelliana*, with which, till lately, *S. fragilis* has been confounded. The root is said to be used in Sweden for staining eggs purple, for Easter festivals; an ancient custom, vestiges of which may still be traced in Scotland. E.)

THIN-LEAVED WILLOW. Amongst rocks on the banks of rivers. Discovered by Sir J. E. Smith above the bridge at Kirkby Lonsdale. Near Hertford. Mr. J. Woods, jun. in Bot. Guide. S. May—June. E.)

22. *S. MYRSINITES*. Leaves egg-shaped, serrated, smooth, veiny: (capsules awl-shaped, downy: young branches hairy. E. Bot. E.)

(E. Bot. 1360. E.)—*Fl. Dan.* 1054—*Fl. Lapp.* 7. 6. *Leaves only*; 8. c. f. (A little sturdy shrub scarcely two feet high. *Young leaves* silky. *Leaf-scales* serrated, smooth, spreading, often very large. *Catkins* terminal, erect, thick and obtuse, purplish. *Anthers* bluish. *Scales* inversely-egg-shaped. *Nectary* notched. *Capsule* tapering, downy when young. *Stigmas* oblong, cloven. E. Bot. (Somewhat resembling a *Vaccinium*, but still more like *Betula nana*. Wahl. E.)

GREEN WHORTLE-LEAVED WILLOW. *S. myrsinites*. Linn. *S. retusa*. Dicks. Discovered by Mr. Dickson on rocks upon Ben Lawers, in Scotland. Glen-co. Rev. Dr. Stuart. S. April—May. E.)

(The plant represented in our Pl. XXXI. was originally communicated by Mr. Griffith, (to whom Dr. Townson sent roots from Scotland, under the name of *S. retusa*. Mr. Winch has also more recently furnished the Editor with specimens precisely similar, gathered in Breadalbane. E.)

- (23. *S. PRUNIFOLIA*. Leaves egg-shaped, serrated, naked, smooth above, glaucous beneath: branches rather downy: capsule egg-shaped, silky.

E. Bot. 1361—*Hoff. Sul.* v. 1. t. 19

Stem three feet high, much branched, but less consistently erect than in *S. myrsinites*; the young branches clothed with soft, short, curved down, not rigid, prominent hairs. *Leaves* larger, egg-shaped, flat, serrated; quite smooth, green and shining, without any prominent veins on the upper side, glaucous, veiny, and often silky beneath. *Leaf-scales* very minute, half-egg-shaped, imbricated, notched, often wanting. *Catkins* from short lateral branches, erect, cylindrical, not half so thick as in the real *S. myrsinites*, with round, very hairy, or silky scales. *Nectary* oblong. *Capsules* smaller than in that species. *Stigmas* short, thick, roundish, cloven. E. Bot. An erect shrub. Winch.

PLUM-LEAVED WILLOW. *S. myrsinites*. Lightf. 599. Not uncommon in the Highlands. Breadalbane. Mr. Winch. S. April—May. E.)

- (24. *S. VACCINIIFOLIA*. Leaves egg-shaped, serrated, smooth and even above, glaucous and silky beneath; capsules egg-shaped, silky; stems decumbent.

E. Bot. 2341.

Differs from *S. prunifolia* in its humble, partly procumbent growth, smaller size, slender branches, and narrower leaves, which are much more silky beneath, with close-pressed hairs. E. Bot. Trails on the ground, anthers scarlet. Winch.

BILBERRY-LEAVED WILLOW. *S. prunifolia*. var. Fl. Brit. Not uncommon in the south of Scotland. E.)

- (25. *S. VENULOSA*. Leaves egg-shaped, serrated, smooth, reticulated, with prominent veins above, rather glaucous beneath: capsules elliptical, silky. E. Bot.



E. Bot. 1362.

This much resembles the preceding species in size, general habit, and leaf-scales; but the *leaves* differ materially in having their upper surface always elegantly reticulated, especially towards the margin. The *catkins* are more slender, their scales egg-shaped and blunt; *stigmas* like those of *S. prunifolia*, (of which species both this and the preceding ones are considered merely varieties by Prof. Hooker. E.)

VEINY-LEAVED WILLOW. From the Highlands of Scotland. Dickson. In Breadalbane. Mr. Winch. S. April. Fl. Brit. and E. Bot. E.)

- (26. *S. CARINATA*. Leaves egg-shaped, finely toothed, smooth, minutely veined, folded so as to form a keel: capsules egg-shaped, downy.

E. Bot. 1363.

Larger and more upright than *S. prunifolia* or *S. venulosa*; the young branches are elongated and straight, nearly smooth. Leaf-scales very minute, but shaped as in those species. Leaves remarkably recurved and sharply keeled, so that the two sides approach each other, and the leaf cannot be pressed flat. Both surfaces finely veined, the under slightly glaucous. Catkins small, egg-shaped, with short roundish concave hairy scales. Germen twice as long as its corresponding scale, egg-shaped, silky. Stigmas nearly sessile, egg-shaped, thick and short, at length notched.

FOLDED-LEAVED WILLOW. Communicated by Mr. Dickson from the Scottish Highlands. In Breadalbane. Mr. Winch.

S. April. Fl. Brit. and E. Bot. E.)

- (27. *S. DICKSONIANA*. Leaves elliptical, acute, slightly toothed, smooth, glaucous beneath: young branches very smooth: catkins egg-shaped, short, erect: germen silky.

E. Bot. 1390.

A small upright branched shrub, about one foot high, smooth in all its branches, leaves, and stalks. Leaf-scales very minute. Leaves on short, thickish foot-stalks, flat, upper surface very even and bright green; the under glaucous, finely veined. Catkin-scales dark purplish brown, concave, notched, hairy. Germen stalked, egg-shaped, with a short style, and thick yellow notched stigmas. E. Bot.

Hooker considers this a very questionable species, according with his *S. radicans*, (*S. phyllifolia*. E. Bot.) Smith admits, under certain circumstances, its near approach to *S. arbuscula*. E.) S. April. E.)

BROAD-LEAVED MOUNTAIN WILLOW. *S. myrtilloides*. Fl. Brit. but not of Linn. the latter not found in Britain. Scottish mountains. Mr. Dickson. (In Breadalbane. Mr. Winch.)

28. *S. HERBACEA*. Leaves circular, (serrated, very smooth, reticulated with veins, shining on both sides: germen stalked, ovate, lanceolate, smooth. E.)

Hoffm. Sal. i. 20—(*E. Bot.* 1907. E.)—Fl. Lapp. 7. 3. barren; 8. H. a leaf—Fl. Dan. 117—Fl. Lapp. 3. 4. fertile—Phuk. 436. 7.

Stem about one inch high; bark ash-coloured or brown. Branches irregular, knotty, striking root. Barren Catkins terminal, upright, some lines in length, on fruit-stalks as long as themselves. Stamens two. Nectaries two. Fertile Catkins terminal, shorter than the barren ones, on fruit-

stalks of the same length. *Leaves* roundish, or egg-shaped, very minutely serrated; the largest nearly one inch diameter; blunt, or slightly notched at the end; smooth; on leaf-stalks. Hardly to be called herbaceous; it is rather hard and woody. Hoffm. Prof. Hooker remarks that this most diminutive Willow is in fact not quite so small as is generally supposed, for its stems divide and creep below the surface of the earth, while the branches scarcely rise an inch above. *Germen* large, but soon ripening and shedding its seeds, which are furnished with their silky or comate appendages. Fl. Scot.

(LEAST WILLOW. E.) HERBACEOUS WILLOW. On the sides of Snowdon, and on the mountains of Westmoreland, Yorkshire, and Scotland. (Near the summit of Carnedd Llewelyn; and about Bwlch Glâs ascending Snowdon. Mr. Griffith. E.) Summit of Skiddaw, at the height of 3,000 feet: and on other mountains in the north. Mr. Woodward. (On a mountain called the Beacon, near Brecon. Mr. Jones, in Bot. Guide. Summit of Saddleback. Hutchinson. On Ingleborough, Yorkshire. Teesdale. Ben Lomond and Ben Lawers. Mr. Winch. E.) S. June—July.*

(2) *Leaves perfectly entire, smooth, or nearly so.*

29. *S. RETICULATA*. (Leaves elliptic-orbicular, obtuse, entire, smooth, reticularly veined, glaucous beneath: germen sessile, downy. E.)

Hoffm. Sal. il. 25, 26, 27—(E. Bot. 1908. E.)—J. B. i. b. 217. *S. pum.* fol. rot.—Fl. Dan. 212. leaves only—Fl. Lapp. 7. 1 and 2—*ib.* 8. l.

A shrub, not much more than a finger's length, procumbent. *Barren Catkin* mostly terminal, rather woolly, an inch long, on a long, slender fruit-stalk. *Stamens* two. *Nectary* double. *Fertile Catkin* terminal, seldom more than one on a branch, cylindrical, rather longer than the barren; on a very long fruit-stalk. *Leaves* on leaf-stalks, egg-shaped, or elliptical, either pointed, or rounded, or notched at the end; thick, rigid, very entire, when fully grown smooth on both sides, but marked with a network of veins. Hoffm. Large in proportion to the plant. (When cultivated, forming a beautiful tuft of considerable extent. Hook. E.)

NET-WORK WILLOW. (WRINKLED WILLOW. E.) Mountains in Wales, Yorkshire, Cumberland, and Scotland. (Near the summit of Carnedd Llewelyn; rocks on the N. side, of Penmaen Mawr, and of Llandidno, Carnarvonshire. Mr. Griffith. On Ingleborough, Yorkshire. Ray. At Tyne Head; in many places at Alston, Graystock, and Abbey Holm, Cumberland. Hutchinson. On Ben Lawers. Mr. Winch; who affirms that this plant has never been found in the north of England, large specimens of *S. herbacea* having been mistaken for it. E.) S. May.

(3) *Leaves hairy or woolly.*

(30. *S. ARENARIA*. Leaves nearly entire, egg-shaped, acute, reticulated and somewhat downy above, very woolly and veiny beneath: style as long as the densely woolly germen: stigmas linear, deeply divided, the length of the style.

E. Bot. 1809.

A stout, branched, bushy shrub, two to four feet high, with reddish brown

* Horses and cattle are fond of it. (As also, may be presumed, is the Ptarmigan, this most diminutive of shrubs, "minima inter omnes arbores:" Linn. being called in Lapland, according to Wahlberg, *Ptarmigan-leaf*. E.)

slightly downy twigs. Down cottony and depressed. Leaves slightly waved, somewhat revolute. *Stipulæ* none. *Fruit-stalks* broad at the base, not decurrent. *Cutkins* egg-shaped, soon becoming cylindrical, hairy. *Stamens* smooth. Fl. Brit. and E. Bot. *Germen* with a remarkably long, slender, dark-coloured style. Leaves almost white beneath. Hook. In general appearance most resembling *S. glauca*.

DOWNY MOUNTAIN WILLOW. *S. arenaria*. Linn. *S. Lapponum* of Huds. Lightf. With. Ed. 4, but not of Linn. which is not yet ascertained a native of Britain. Sm. E. Highland mountains. Craig-cailleach and Malghyrdy, Breadalbane. Mr. Stuart. Not far from the marble quarry near Portacurrach in Incolmkill. Garnett's Tour. On the S. W. coast of Anglesey. Rev. H. Davies. Basford Bottom, Nottinghamshire. Martyn. On Ben Lawers. Mr. Winch. S. May—June. E.)

- (31. *S. GLAU'CA*. Leaves nearly entire, elliptic-lanceolate, even and nearly smooth above, woolly and snow-white beneath: foot-stalks decurrent: *germen* ovate, sessile, woolly.

E. Bot. 1810—Fl. Dan. 1056.

Smith observes in E. Bot. that *S. glauca* is new to our Flora, and not well known to Botanists in general. It has been considered as a variety of *S. arenaria*, but Mr. Crowe was aware of its difference. It is the size of *S. arenaria*, but the elliptical, narrower, smooth and even leaves, peculiarly white, (when young beautifully satiny,) with less prominent veins beneath, and the more decurrent foot-stalks, evidently distinguish it; the *stigmas* are shorter and thicker, and we have occasionally noticed convex round *stipulæ*, not observed in the other.

GLAUOUS MOUNTAIN WILLOW. *S. glauca*. Linn. *S. appendiculata*. Oed. Highlands of Scotland. Breadalbane. Mr. Winch. S. May. E.)

(Another Highland Willow, *S. Stuartiana*, Sm. is described, with "Leaves nearly entire, ovate-lanceolate, acute; shaggy above; densely silky, somewhat cottony, beneath; style as long as the almost sessile, woolly *germen*; stigmas capillary, deeply divided, the length of the style." A shrub, two or three feet high. E.)

- (32. *S. ARGENTE'A*. Leaves entire, elliptical, somewhat revolute, with a recurved point, rather downy above; silky and shining beneath, as well as the branches. E. Bot. E.)

E. Bot. 1364—Hoffm. Sal. ii. 28 and 29—Jacq. Austr. 409,

Branches five or six inches long. Leaves when young covered with a silky down, especially on the back and at the edge, but this vanishes with age. Smith describes the branches as long, nearly prostrate; the young ones angular and silky. Leaves on shortish stalks, about an inch long; upper side green, veiny and smooth when full grown; the under covered with beautiful silvery close-pressed hairs. *Stipulæ* variable in size, egg-shaped, flat, entire, silky. *Cutkins* cylindrical, obtuse, at first sessile. Scales strap-shaped, inclining to inversely-egg-shaped, obtuse, or notched, hairy. *Stamens* yellow, smooth. *Capsules* on very long stalks. Style short. *Stigmas* at length cloven. E. Bot. E.)

SILKY SAND WILLOW. (Welsh: *INygen sidanaidd y tywyn*. E.) *S. repens*. Hook. & Huds. *S. arenaria*. Lightf. Huds. Ed. 1. *S. fusca*. With. Ed. 4. E.) Sea shores among loose sand, in various parts of England, Scotland, and Wales; as in Cantire, between Macrianesh and Bar. Lightfoot. On the slope of a high hill, between Kilnsay and Arncliffe, Yorkshire. Curtis.

(In the Sand Burrows at Langhorn, Carmarthenshire. Mr. Hurlock. Bot. Guide. A little north of Sandown Castle, plentifully, and about Walmer Castle; and on Water-down Forest, near Tunbridge Wells. Mr. J. Woods, jun. ditto. Near Percy's Cross, Northumberland. Winch Guide. S. W. coast of Anglesey. Welsh Bot. E.) S. May—July.

- (33. *S. PROSTRATA*. Leaves elliptic-oblong, convex, rarely toothed, with a curved point; glaucous, veiny, and silky beneath: stem prostrate: stipulæ minute: style shorter than the stigmas.

E. Bot. 1959.

Stems forming an entangled mat, most of the *branches* long, straight, and tough, spreading on the ground; some few short ones standing erect; all are leafy, round, finely downy when young. *Leaves* scattered, on shortish thick stalks, scarcely an inch long, somewhat recurved; above dark, minutely downy, veiny, convex. *Stipulæ* rare and small, merely little glands. *Catkins* egg-shaped, blunt, dense, silky. *Scales* with a blunt, brown tip. *Germen* egg-shaped, silky, somewhat stalked. *Style* short and thick. *Stigmas* cloven. *E. Bot.*

PROSTRATE DWARF WILLOW. In moist mountainous situations, found by Mr. Dickson in Scotland; and by Mr. E. Forster, near High Beech, on Epping Forest. On Broadwater Common, near Tunbridge Wells. Mr. J. Woods, jun. in Bot. Guide. (Near the Land's End, Cornwall: and by the coal-pits on Bovey Heathfield, Devon. Rev. J. Pike Jones. On Porland heath, near Norwich. Mr. Crowe. S. March. April. E.)

- (34. *S. FUSCA*. Leaves elliptic-oblong, acute, straight, flat, with a few glandular teeth, glaucous and silky beneath: foot-stalks slender: stem erect, much branched: stipulas none. *E. Bot.*

E. Bot. 1960—*Fl. Lapp. Ed.* 2. 299. t. 8. f. 7.

Upright, bushy, about a foot high, not creeping, as far as we can observe from cultivating it many years, though Linnaeus says otherwise. *Branches* round, downy when young, thickly clothed with leaves. *Buds* large, egg-shaped, red and shining. *Leaves* scarcely an inch long, in drying they turn black or brown. *Catkins* egg-shaped, short and dense, with brown hairy obtuse scales. *Anthers* red before they burst. *Nectary* egg-shaped, brown. *S. repens* is best distinguished from this species by its creeping stem, the leaves being not always entire. *Fl. Brit. and E. Bot.*

BROWNISH DWARF WILLOW. *S. fusca*. Linn. *S. repens* δ Hook. Not rare in moist mountainous heaths of the North. In Breadalbane. Rev. Mr. Stuart. In Epping Forest, Essex. Mr. E. Forster, jun. in Bot. Guide. Near Southampton. Pulteney. Common on heaths about London. Mr. J. Woods, jun. in Bot. Guide. Pastures near Shewing Shields, Northumberland. Mr. Winch. Near Beverley. Teesdale.

S. May. E.)

- (35. *S. FORTIDA*. Leaves elliptical, nearly entire, with a recurved point, glaucous and silky beneath: stem recumbent: germen ovate-lanceolate, on a silky stalk nearly equal to the obovate scale.

E. Bot. 1962.

A low creeping shrub, with long, straight, densely leafy, recumbent, or somewhat ascending, round, downy branches; silky when young. *Stipulas* revolute, convex, silky, occasionally notched; sometimes small, lanceolate. *Catkins* lateral, sessile, with two or three small branches;

the barren ones short, ovate, dense, with obovate, bearded, brown-edged scales; fertile rather larger, and subsequently more oblong, with several small, ovate, acute bractes; their scales longer, brown in the upper half. Style short. Stigma thick, cloven.

Var. 2. *S. parvifolia*. E. Bot. 1961. Smaller in every part than the other more common kind. Branches more recumbent. Leaves shorter. Both are distinguishable by a nauseous scent like that of fresh water fish or aquatic herbs. Found at East Winch, and in Wrongay fen, Norfolk; by Mr. Crowe. S. May. Sm. Eng. Fl. E.)

FISHY WILLOW. *S. adscendens*. E. Bot. Putney heath; in a wood by West Wickham, and at Addington, near Croydon. Dillenius. Porland heath, near Norwich. Mr. Crowe.

(36. *S. REPENS*. Leaves egg-spear-shaped, somewhat pointed; smooth above, silky underneath, very entire: stem depressed. Fl. Brit. E.)

Hoffm. Sal. i. 15 and 16—E. Bot. 183—Clus. i. 85—Dod. 843. 2—Ger. Em. 1391. 6—Park. 1433. 2. and 3—Ger. 1205. 6—J. B. i. b. 216. 2.

Scarcely larger than *S. herbacea*, the points only of the branches appearing above ground. Linn. Root thick, creeping, knotty, wrinkled, blackish. Branches, some trailing, others upright, from three to seven inches long, tough, knotty, smooth, reddish, or dirty green yellow when old, greyish and cottony when young. Hoffm. Barren Catkins about half an inch long, and one quarter broad. Fertile Catkins rather smaller. Leaves half to three quarters of an inch long, one fifth of an inch broad, strap-spear-shaped. (Greatly resembling *S. fusca*, but the long-stalked, very downy, bluntish germen, and short style, contrasted with the sessile germen of that species, tapering into a longish style, clearly distinguish them. Sm. E.)

CREeping DWARF WILLOW. (Welsh: *Cor Helygen*; *Helygen y cwm*. E.) *S. repens* β Huds. α Hook. *S. humilis*. Ger. Em. 1391. St. *S. depressa*. Hoffm. Wet sandy heaths, not uncommon. S. April—May.

Var. 2. *S. repens* α Huds. Clus. i. 86. 2—Ger. Em. 1391. 8—Park. 1435. 3. Either this or a variety of it, with leaves silvery on both sides, was found near Sandwich. R. Syn.

37. *S. ROSMARINIFOLIA*. Erect; leaves strap-spear-shaped, pointed, (straight, entire; silky beneath; catkins ovate, recurved; germen stalked, lanceolate, silky.

E. Bot. 1365. E.)—Lob. Obs. 568. 1. Ic. ii. 137. 2—Park. 1435. 4—J. B. i. b. 214. 2.

(About three feet high, divided into many slender, leafy branches, silky when young. Leaves on short slender stalks, straight, an inch and a half or more in length, sometimes a little glandular at the edge; downy above when young, smooth, and dark green with age. Leaf-scales very upright, flat, spear-shaped, rarely divided. Catkins lateral, nearly sessile, egg-shaped, very short, remarkable for being always recurved. Scales elliptical, small, black, hairy. Germen on a longish stalk, egg-spear-shaped, silky. Stigmas almost black, egg-shaped, at length cloven, with a shortish style. Fl. Brit. and E. Bot. E.)

ROSEMARY-LEAVED WILLOW. *S. repens* ϵ Huds. Found among Mr. J. Sherard's dried plants, the place not named. R. Syn. On the edge of a rivulet which runs into Semer Water, Wensleydale, Yorkshire. Curtis.

(In moist sandy places in several parts of Great Britain, especially in the north. *E. Bot.* Banks of the Darwent, near Ebchester, Durham. Mr. Thornhill. In Eridge Park, Sussex. Mr. Forster. *Bot. Guide.* E.)

S. April.

- (38. *S. CINE'REA*. Stem erect; lower leaves entire; inversely egg-spear-shaped, underneath reticulated with veins, glaucous, downy: stipulas half-heart-shaped, serrated: germen silky: its stalk half as long as the lanceolate leaves.

E. Bot. 1897.

Twenty or thirty feet high, if left to its natural growth; in hedges or thickets more dwarf and bushy. It is readily to be distinguished from the common willows by a rusty glittering hue, residing more perhaps in the fine veins, than in the pubescence sprinkled over them, which consists of minute, prominent, shining hairs. Branches smooth, reddish brown, crooked. Monoecious catkins have been observed on this species, which is one of the most useless of *Sallows*, a tribe known by their obovate, or rounded downy leaves, and thick, early, silky catkins; with prominent yellow, distinct stamens, two in each flower. Sm. Eng. Fl.

GREY SALLOW. *S. cinerea*. Linn. In various parts of England. In moist woods. In a wood by the road side near Bromley, Kent. Mr. E. Forster. Cumberland, and Fream Wood. Lightfoot. Boxhill, and at Esher. Surry. Mr. J. Woods, jun. Between Bristol and the Severn. Sir J. E. Smith. Foot of Derwent-water. Mr. Winch. T. April. E.)

39. *S. AURITA*. (Branches trailing: leaves somewhat serrated, convex, obovate, obtuse, with a small hooked point; hairy and reticulated with veins, on both sides; stipulae roundish, convex, toothed: germen silky, stalked; stigmas nearly sessile. Sm. E.)

Hoffm. Sul. i. 4, and i. 5.—*foliage* i. 22—(*E. Bot.* 1487. E.)

A shrub, a few feet high; covered with a greyish smooth bark, not cracked. Branches numerous, spreading, smooth, tough, blackish brown. Barren Catkins, upright, egg-shaped, blunt, half an inch long or more, three or four lines broad. Fruit-stalk short. Stamens two. Nectary single. Fertile Catkins upright or expanding, egg-oblong, or cylindrical, blunt, half to one inch long, and half as broad, on longer fruit-stalks. Leaves roundish, or inversely egg-shaped, very entire but sometimes waved at the edge; blunt; or with a short taper point at the end; dark green above, somewhat woolly; paler, cottony, and reticulated underneath. Leaf-stalk short, cylindrical, cottony. Stipule two at the base of each leaf-stalk, kidney-shaped, scalloped and toothed. Leaves when young soft, even, an inch long; when old, rigid, wrinkled, and two inches or more in length. Sometimes flowers in autumn as well as in spring. Hoffm. (The leaves occasionally form permanent rosaceous tufts, like those of *S. helix*.)

A very small-leaved var. has been observed; and sometimes bears, as does *S. cinerea* occasionally, catkins composed of pistils in their lower half, and stamens in the upper; above which, on one branch, are two entirely of barren florets.

ROUND-EARED SALLOW. TRAILING SALLOW: from the branches shooting horizontally among other bushes to a great extent. (Welsh: *Helygen grynglustiawg.* E.) *S. caprea* δ Huds. Woods and hedges. Dry mountainous heaths. Frequent about Bungay. Mr. Woodward. (In Shropshire and

Wales it abounds. E. Bot. Hedges between Rugby and Dunchurch. In hedges near Alcester. Purton. Very common about Blymhill, Salop. Rev. S. Dickenson. E.) S. May—June.*

40. *S. AQUATICA*. Leaves slightly serrated, oblong-egg-shaped, flat, somewhat woolly underneath, (stipulas rounded, toothed. E. Bot. E. Bot. 1437.

Stem generally bushy, rarely forming a tree. *Catkins* cylindrical, with small brown tipped hairy scales, and an oblong nectary to each. *Capsules* tapering, downy on longish stalks. *Stigmas* entire. *Style* very short. *Leaves* vary in shape and size, but are more or less inversely-egg-shaped, downy and veiny; thin, soft and pliable; flat, and not crisped or waved, in which latter particulars they differ greatly from those of *S. cinerea* and *aurata*. E. Bot.

WATER SALLOW. Welsh: *Dyfr Hŷlygen*. *S. aquatica*. Sm. Willd. *S. caprea*. Huds. Lightf. &c. *S. cinerea*. With. Ed. 4. Relh. Hull. but neither *S. cinerea* nor *S. caprea* of Linn. Sm. E.) This is perhaps the most common of all our Willows. In moist hedge-rows and in woods. S. April.†

- (41. *S. OLIFOLIATA*. Leaves inversely-egg-spear-shaped, flat, minutely indented, acute, underneath glaucous and hairy: leaf-scales small, notched. E. Bot. 1402.

Four to ten feet high. *Branches* slender, clothed with fine short down. *Leaves* rather spreading, straight, somewhat rigid, tapering from the middle to the base, finely downy above, hairy, with reticulated veins beneath, where they often assume a rusty hue. *Foot-stalks* downy. *Flower-buds* very large, downy, brown. *Barren Catkins* shortish, very thick, with a brown, hairy scale, a blunt nectary, and two distinct, long, golden stamens to each flower. E. Bot.

Sir J. E. Smith states, that Mr. Borrer communicated a specimen of extraordinary transmutation, observed by him for successive years, in which several of the upper catkins gradually change their nature.

OLIVE-LEAVED SALLOW. (Welsh: *Helygen oliwydd-ddail*. E.) Hedges and coppices. In various parts of Norfolk; and common in Essex. First glen east of Hastings. Mr. J. Woods, jun. Bot. Guide. (Common near Beaumaris. Welsh Bot. E.) S. March. E.)

- (42. *S. COTINIFOLIATA*. Leaves elliptical, almost circular, slightly toothed, downy, and marked with rectangular veins beneath: stigmas cloyen. E. Bot. 1403.

Remarkable for its round *leaves* much resembling those of a quince tree. Specimens from the north only two feet high, those from Norfolk three or four times that height. *Branches* spreading, clothed with fine but not thick-set down. *Leaves* spreading, thick and firm, on thick hairy stalks. *Fertile Catkins* about half an inch long when in blossom, egg-shaped,

* The shoots are slender, and tolerably flexible.

† The bark has been manufactured into coarse paper and pasteboard. The wood is excellent for fuel, as also for stakes and hurdles, (and greatly esteemed for waggon staves. E.)

with blunt, short, black, hairy scales. *Nectary* short, obtuse. *Germen* on a short stalk, spear, or egg-shaped, downy, with a considerable style, and a pair of spreading, cloven, obtuse stigmas. *Capsules* spear-shaped, downy. Fl. Brit.

QUINCE-LEAVED SALLOW. In the north; also in Norfolk. Banks of Esk, near Forfar. Mr. G. Don. Hook. Scot. E.) S. April. E.)

43. S. LANA'TA. (Leaves roundish-ovate, pointed, shaggy on both sides, glaucous beneath: *germen* sessile, oblong, smooth: style four times as long as the blunt, divided stigmas.

Leaves only, Fl. Lapp. 7. 7, and 8. x—Fl. Dan. 245 and 1657.

Stem three or four feet high, with numerous thick distorted branches, downy when young. *Leaves* broader than those of any other British willow, except *S. caprea*, on shortish stout foot-stalks, elliptical or roundish, with a short oblique point, entire, though somewhat wavy, from one and a half to two and a half inches long; occasionally heart-shaped at the base; sometimes more obovate, inclining to lanceolate, and the earlier ones much smaller; all of a hoary, or grey aspect; being covered, more or less completely, with long, soft, silky, shaggy hairs, especially the upper surface; the under is more glaucous, beautifully reticulated with veins. *Stipulae* ovate, acute, hairy, veiny. *Cutkins* terminal, large, very handsome, bright yellow.

WOOLLY BROAD-LEAVED WILLOW. *S. lanata*. Linn. Willd. Wahl. Sm. *S. caprea*, and *S. chrysanthos*. Oed. Found by Mr. T. Drummond on rocks among the Clova Mountains. S. Sm. Eng. Fl. E.)*

44. S. CAPREA. Leaves egg-shaped, wrinkled, cottony underneath, waved, toothed towards the end: (capsules swelling. E.)

Hoffm. Sal. i. 3. 5. 4. Foliage of the different varieties, i. 21. 1—E. Bot. 1488—Ger. 1203. 3—Ger. Em. 1390. 3—Park. 1432. 1.

No other species of *Salix* requires so dry a soil. It sometimes becomes a moderate-sized tree. *Bark* ash coloured, cracks very fine. *Barren Catkins* egg-oblong, one to two inches long, often one inch broad, on short fruit-stalks, which are woolly, furnished with eight to twelve leaflets, in a double or triple series; the upper catkins flowering first. *Stamens* two. *Nectary* one. *Fertile Catkins* oblong or cylindrical, one to two inches or more in length, half an inch broad, on fruit-stalks which have six or seven leaflets. *Leaves* roundish, egg-shaped, inversely-egg-shaped, or egg-oblong, four to five inches long, about three broad, either smooth or downy above, dark green; blueish grey, and cottony on the back, and marked with a network of veins. *Stipulae* only to the uppermost leaves, roundish, finely scalloped. Gleditsch found on this species both barren and fertile flowers, and others that were perfect. Hoffm. Its copious yellow blossoms enliven the landscape in early spring. Much larger than *S. aquatica*. E. Bot. E.)

(GREAT ROUND-LEAVED SALLOW. Scotch: *Saugh*. Gaelic: *Seileach*. Welsh: *Helggen grynddail fwyaf*. E.) Common in hedges and thickets.

Both kinds of this willow grow at Blymhill, Shropshire. It blossoms the

* A most beautiful Willow, which according to Wahlenberg, yields more honey than any other, inasmuch that the catkins are sweet to the taste, and are much frequented by bees. E.)

earliest of the willow kind; the *Catkins* are vulgarly and not unaptly called *Goslings*, from their striking similitude of colour, and also appearing precisely at the time goslings are hatched. Rev. S. Dickenson.

T. March—April.*

45. *S. ACUMINATA*. (Leaves lanceolate-oblong, pointed, waved, slightly toothed, tomentous beneath; stipulæ kidney-shaped; capsule ovate, tapering.

E. Bot. 1434. *E.*)—*Ger. Em.* 1390. 4—*Park.* 1432. 2.

Generally of more humble growth than the preceding, though sometimes becoming a lofty tree. Leaves of a totally different shape, three or four inches long, and one at least in breadth. Footstalks reddish.

Var. 2. Leaves rounder and smaller.

In hedges near Chisselhurst, trees of a considerable height. Ray. On high and dryish heaths. Hudson.

(LONG-LEAVED SALLOW. Welsh: **Helygen grych hirddail*. *S. acuminata*. Sm. Hook. but not of Hoffm. S. T. April. May. Sm. E.)

- (46. *S. STIPULARIS*. Leaves spear-shaped, pointed, bluntly scalloped, underneath downy: stipulæ half-heart-shaped, very large: nectary cylindrical.

E. Bot. 1214.

Branches upright, long, round, clothed with short velvety down. Leaves on shortish stalks, nearly erect, five inches long, spear-shaped, sharp-pointed, rounded at the base, unequally and slightly scalloped, green and smooth above, downy beneath, with a pale rib and many parallel curved veins. Stipulæ on short stalks, half-heart-shaped, long-pointed, toothed or cut at the base. Catkins large and thick, with scales inversely-egg-shaped, hairy. Nectary long, cylindrical, blunt. Germen on a short stalk egg-shaped, downy. Style somewhat elongated. Stigmas remarkably long, awl-shaped, recurved, undivided. In structure of fructification it most resembles *S. viminalis*, but it is a far less useful osier. Easily known at first sight, by its coarse tall habit, and conspicuous stipulæ. Sm.

AUMICLED OSIER. (Welsh: *Helygen glustnawg*. *E.*) First noticed by Mr. Crowe in osier grounds near Bury. Since found by Mr. E. Forster, jun. on the banks of the Lea near Higham Hill, Walthamstow; and near Lea Bridge, Essex. Bot. Guide. Between Pet and Fairlight, near Hastings; and osier ground at Stoke Newington. Mr. J. Woods, jun. ditto. Near Ripon. Mr. Brunton, ditto. (About Beaumaris. Welsh Bot. Common in Scotland. Mr. D. Don. Hook. Scot. E.) P. March. E.)

* (The wood and branches of the Sallow are particularly useful for making hurdles, handles of hatchets, and shoe-makers' boards. The honey of the catkins is acceptable to bees, and the fondness of goats for the species is indicated by the trivial name. Its bark is bitter and astringent, and has lately been much recommended for the same purpose as the Peruvian Cinchona. *E. Bot.* The Highlanders employ the bark to tan leather, and the handles of various agricultural implements are made with its wood. Hook. Scot. *Uredo farinosa*, confluent, orange yellow, changing to dark brown, mealy; is frequent on the leaves: also *Xyloma salicinum*, black, glossy, irregular in shape; thick, white within, hard, and wax-like. *Purt. Grev. Scot. Crypt.* 118. 2. Upon the Sallow also is sometimes found *Phalena* (Noctua) *Chrysoglossa*, with a slender, semi-transparent green larva: and feeding on the wood, in the heart of which it spins itself up, the larva of *Sphinx crabroniformis*, the Lunar Hornet. *Lewin in Linn. Tr. v. 3. t. 1.* *Apion velox*, remarkable for its rapid movement, may likewise be observed on *S. caprea*. *E.*)

47. *S. VIMINALIS*. (Leaves-spear-strap-shaped, very long, acute, white and silky beneath : branches rod-like : style elongated ; germen sessile. E.)

Hoffm. Sal. 1. 2. and 1. 5. 2. *Foliage* 1. 21. 2—*J. B.* 1. b. 212. 2—(*E. Bot.* 1898. E.)—*Fuchs.* 336—(*Munt.* 12, is *S. vitellina*, and *Hunt. Evel.* 245, *S. fragilis*.)

A slender and very tall *shrub*. Sometimes tree-like. *Bark* greyish, smooth, with here and there a crack. *Branches* very long, straight, slender, tough. *Barren Catkins* egg-shaped or oblong, one to one and a half inch in length, three or four lines in breadth, on very short fruit stalks. *Stamens* two. *Nectary* one. *Fertile Catkins* egg-oblong or cylindrical, one to one and a-half inch long, half an inch broad, on fruit-stalks two lines long. *Leaves*, especially the lower ones, a span long or more ; waved at the edge. The leaves being silvery underneath, the nectary in the barren flower long and slender, and the style in the fertile flower very long, are sufficient to distinguish this and its varieties from other species. *Hoffm.* The edges of the *leaves* are rolled back, especially when young : when old they are waved, but *never serrated* ; for which reason this species is now removed to the third division.*

COMMON OSIER. (Welsh : *Helygen gyffredin asonawl*. E.) Willow-beds, woods and hedges, especially in moist boggy land. S. April—May.†

48. *S. ALBA*. Leaves spear-shaped, tapering to a point, serrated, downy on both sides : the lowermost serratures glandular : stigmas deeply cloven. E.)

Hoffm. Sal. i. 7 and 8. *Foliage* i. 24. 3—(*E. Bot.* 2430. E.)—*Blackw.* 327—*Matth.* 199—*Dod.* 843. 1—*Lob. Obs.* 567. 2, *Ic.* ii. 136. 2—*Ger. Em.* 1389. 1—*Park.* 1430. 1—*Gars.* 508—*Ger.* 1203. 1—*J. B.* i. b. 212. 1—*Trag.* 1077—*Lon.* i. 25. 2. b.

This and *S. fragilis* are the largest of willows. *Linn.* A tall straight *tree*, bark grey, cracked. *Branches* numerous, upright, but expanding, grey, or brown green. *Barren Catkins* cylindrical, blunt, one and a half to two inches long, four lines broad, on fruit-stalks which are half an inch long. *Stamens* two. *Nectaries* two, one before the stamens inversely-heart-shaped, the other behind them, and oblong. *Fertile Catkins* slender, cylindrical, two inches long, three or four lines broad ; on fruit-stalks near an inch in length. *Leaves* sharply and elegantly serrated, shining but pubescent above, white and silky underneath. Inner bark green ; in *S. vitellina* it is yellow. *Hoffm.*

* (Sir J. E. Smith distinguishes the proper Osier from the Sallows, by their long, straight, flexible, and mostly tough twigs ; their generally sessile germens, and elongated styles and stigmas. &c.)

† The branches make excellent hoops, and baskets of the larger sort : (a very ancient usage,

“ And bending *Osiers* into baskets wove.”—*VING.* E.)

It is often planted to prevent the banks of rivers from being washed away by the force of the current ; and it forms a hedge very useful in keeping off winds.—Horses, cows, sheep, and goats eat it. *Linnaeus*.—Putecons and wheels for catching eels ; and bird-cages are made of the twigs. *Stokes*. (The *Treatise on Planting and Ornamental Gardening* says, Of all aquatics, the Osier stands first as a coppice wood, whether it be cut annually for the basket-makers, or be suffered to stand three, four, five, or more years for withs, hurdles, edders, stakes, rake handles, &c. or poles of almost any length or dimensions. Having prepared the ground, insert the setts, (cuttings about

COMMON WHITE WILLOW. (Welsh: *Helygen wen*. Gaelic: *Saileach*. E.) Woods, hedge-rows, and wet meadow and pasture land. T. April.*

(Var. 1. Differing in the greater luxuriance, and more blue hue of the foliage, and the almost entire destitution of hairs from the under side of the adult leaves.

E. Bot. 2431.

Remarkable for the rapidity of its growth.†

This may probably be the "glaucous" var. observed by the Rev. Hugh Davies, on Dinam Demesne, Anglesey. E.) *S. alba*. var. Fl. Brit. Hook. Grev. *S. cærulea*. E. Bot.

one foot long,) in March. The second summer, the shoots, although of little value, must be trimmed off; but the third summer they will produce marketable ware, and will increase in quantity and value till the profits arising from them be almost incredible. In situations which the Osier affects, and in countries where the twigs are in demand, Osier grounds have been known to pay an annual rent of ten pounds an acre. Under ordinary circumstances they will, if properly managed, pay about half that sum. A variety called *Velve Osier*, (differing from the foreign one it would appear) is still more highly esteemed for the pliability of its twigs. From the interesting observations of Mr. Curtis (Linn. Tr. v. i.) relative to the depredations of *Curculio lapathi*, and *Sitpba grisea*, on this species of Willow, it appears that the former penetrates into the substance of the trunk by excavating cylindrical cavities, which also afford the more ready admission to the latter. Hence even the most casual crack or crevice becomes worthy of attention, as facilitating such procedure, for if the larvæ have once entered the tree we shall in vain seek a remedy. As a preventive, whenever injury may have arisen from lopping, or other cause, it may be prudent to apply canvas with some adhesive substance: or brushing over with coal or gas tar, especially during June or July, when the moth comes out of its chrysalis. E.)

* It prefers a moist and open situation; grows quickly, and bears lopping. The wood is very white, and therefore preferred for making milk pails and butter firkins, (and its chips for Willow bonnets. E.) It is also used for flooring, for chests, and for boxes. It is light, tough, and pliable. The Rev. Mr. Stone, in Phil. Trans. liii. p. 195, gives an account of the great efficacy of the bark of this tree in curing intermittent fevers. He gathers the bark in summer, when it is full of sap, dries it by a gentle heat, and gives a dram of it powdered every four hours between the fits. In a few obstinate cases he mixed it with one-fifth part of Peruvian bark. (It is remarkable that this tree grows naturally where intermittents are most prevalent, and thus docs Nature, by a wise and tender provision, place bane and antidote in contiguity. E.) Whilst Peruvian bark remained at a moderate price, it was hardly worth while to seek for a substitute; but now its price is more than doubled, and the supply from South America hardly equal to the consumption, we may expect to find it dearer and more adulterated every year. The White Willow bark is, therefore, likely to become an object of attention to physicians, and if its success upon a more enlarged scale of practice prove equal to Mr. Stone's experience, the public will be much indebted to that gentleman for his communication. The bark of *S. triandra* and *fragilis* possesses the same properties. A series of experiments should be instituted to ascertain which of the species is preferable. This bark will tan leather, (and a decoction dyes yarn of a cinnamon colour. E.) Horses, cows, sheep, and goats eat the leaves and young shoots. Whoever desires to shade a walk with willows, should set barren plants only, or they will soon multiply so as to form a thicket instead of a walk. The same observation is applicable to poplar. Bees are fond of the flowers. (The Abbot's Willow, at Bury St. Edmond's, of this species (said to have existed at the period of the dissolution of the monastery), measures in height seventy-five feet, girth eighteen feet six inches, and contains of timber 140 cubic feet. Vid. Strutt's Sylva Britannica. E.)

† (Prof. Hooker records a cutting planted at Norwich, which in ten years became a tree of thirty feet in height, and five feet two inches in girth. Sir J. E. Smith states, "The superior value of the wood and bark, the rapid growth, as well as handsome aspect of the tree, its silvery blue colour, its easy propagation and culture, in dry as well as wet situations, all render it decidedly superior to our common White Willow." E.)

- (49. *S. HIRTA*. Leaves elliptic-heart-shaped, pointed, finely notched, downy on both sides: leaf-scales half-heart-shaped, flat, toothed, nearly smooth; branches hairy.

E. Bot. 1404.

A small tree. Branches thick, covered with close prominent horizontal hairs. Leaves two inches long. Foot-stalks longish, very hairy. Barren Catkins cylindrical, rather slender. Scales somewhat acute, brown, hairy. Nectary blunt, papillary. Stamens yellow, long. *E. Bot.*

HAIRY BRANCHED SALLOW. Observed in Norfolk by Mr. Crowe.

T. April—May. *E.*)

- (50. *S. RUPES'TRIS*. Leaves inversely-egg-shaped, serrated, flat, silky on both sides: stipulæ hairy: branches minutely downy: germen stalked, awl-shaped, silky: stigmas undivided.

E. Bot. 2342.

A trailing, depressed shrub: branches very finely downy, of a dark hue. Leaves about an inch long, acute, broadish, not wrinkled; veiny, finely and regularly serrated. The scales or small leaves of the flowering buds very smooth above. Stipulæ small, egg-shaped. Catkins egg-shaped and thick, scales very hairy; the fertile ones soon elongated, and cylindrical. Germen at first rather egg-shaped. Style prominent, smooth. Stigma egg-shaped, scarcely notched, never deeply cloven. *E. Bot.*

SILKY ROCK SALLOW. Rocks of Craig Chailloch and Mael Ghyrdu, in the Highlands. Mr. W. Borrer. The Editor has been favoured with specimens from Weardale, Durham, by Mr. Winch. S. April. *E.*)

- (To the Sallows also belong *S. Andersoniana* and *S. Försteriana*. Sm. somewhat obscure species; the former a low shrub, with leaves elliptical, acute, finely notched, downy. Stipulæ half-ovate, smooth. Germen smooth. Stigma cloven.

E. Bot. 2343.

The smooth germen distinguishes this from every other known species of the Sallow tribe.

Brought from Breadalbane (where Dr. Walker first found it,) by the late Mr. George Anderson. At Heaton Dene, and upon the banks of the Tyne, below Newcastle. Mr. Winch.

- S. Försteriana* is a tree of twelve or fifteen feet high: in foliage much resembling the former, but the leaves more decidedly glaucous beneath. Germen silky, which appears to be its chief characteristic.

E. Bot. 2344.

Observed in Scotland by Mr. Forster: in Heaton Dene, and on the banks of the Tyne, near Friar's Goose, by Mr. Winch: by whose kindness we have been favoured with specimens of both these plants. *E.*)

- (51. *S. SPHACELATA*. Stem erect: leaves entire, elliptical, flat, downy on both sides, somewhat withered at the point: stipulæ half-heart-shaped, toothed, erect; capsule tapering.

E. Bot. 2333—*Hoffm. t. G. f. 4.*

A small, bushy tree, six or eight feet high, young branches very soft, with hoary, short, velvet-like down. Leaves soft and downy, always greyish; the tip soon assuming a tawny hue: a striking characteristic. Stam.

twice as long as the scale, with pale-yellow anthers. *Germen* on a hairy stalk as long as the scale. *Style* very short.

WITHERED-POINTED SALLOW. *S. sphacelata*. Sm. Willd. *S. lanata*. Lightf. very distinct from *S. lanata*. Linn. *S. caprea*. var. Hoffm. At Findlarig, near the head of Loch Tay. Rev. Dr. Stuart: in Fl. Scot. April, May. Sm. Eng. Fl. E.)

- (52. *S. SMITHIANA*. Leaves lanceolate, pointed, slightly wavy, minutely toothed; soft, and scarce visibly downy above; whitish and silky beneath: stipulas crescent-shaped, minute: catkins ovate: *germen* stalked: style shorter than the linear, deeply divided stigmas.

Branches erect, wand-like, reddish, brittle and unfit for basket work. *Stipulas* very small, at first lanceolate, a little toothed, hairy; subsequently crescent-shaped. *Catkins* small.

SILKY-LEAVED OSIER. *S. Smithiana*. Willd. *S. mollissima*. Fl. Brit. but not the German plant of Ehrhart; nor the true *Velvet Osier*, which is probably *S. holosericea* of Willd. and not British. About Bury, chiefly amongst osiers. Mr. Crowe. Near Penhard Castle, Glamorganshire. Mr. D. Turner. S. April, May. Sm. Eng. Fl. E.)

FRAXINUS.* *Bloss.* none, or deeply quadrifid; fertile and complete flowers. *Pist.* one. *Caps.* two-celled, two-seeded, (or with rudiments of two-seeds: foliaceous at the extremity, compressed; one-cell barren. *Seed* spear-shaped, pendulous: some flowers without stamens E.)

F. EXCELSIOR. *Leaflets* serrated: flowers without petals.

Fl. Dan. 969—(*E. Bot.* 1692. E.)—*Hunt. Evel.* p. 150; i. p. 145, *Ed.* i.—*Blackw.* 328—*Cam. Epit.* 64—*Park.* 1419. 1—*Gurs.* 97 and 277—*Dod.* 833—*Lob. Obs.* 545. 1; *Ic.* ii. 197. 2—*Ger. Em.* 1472—*Matth.* 135—*J. B.* i. b. 174, *diseased excrescences, and no leaves.*

(A tall and graceful forest tree, with smooth, greenish, grey bark; the extremities of the lower pendent branches of full grown plants remarkably curving upwards. *Buds* large, black. *Flowers* minute, brown, preceding the leaves. *Seed* covered with rusty powder. E.) Some trees producing flowers with stamens and pistils, and others only flowers with pistils; but it often happens that the former have some with only pistils intermixed; and the reverse. *Buds*, the lateral ones producing bunches, the terminal one leaves. Linn. *Leaves* opposite, on leaf-stalks. *Leaflets* sessile, four or five pair, with an odd one.

ASH-TREE. (Welsh: *Onen*, *Onwyddn*. Gaelic: *Uinsionn*. Irish: *Cran Fuinfeog*. E.) Woods and hedge-rows. T. March—May.†

This is clearly a distinct variety, and my friend Dr. Bostock has supplied me with specimens of it from a plantation near Liverpool.

* (Φραξω, to enclose or hedge in: so called by the Romans, and probably alluding to some usage with which we are unacquainted. E.)

† (The Ash tree has been styled by Gilpin, and not inappropriately, the Venus of the forest;

“*Fraxinus in sylvis pulcherrima*.”

Var. 2. SIMPLE-LEAVED ASH. *F. heterophylla*. Vahl. Sm. *F. simplicifolia*. Willd. Leaves simple. T. H. W. in *Gent. Mag.* vol. iv. p. 598.

Raised from seeds, it produces pinnate leaves.

whose light and airy foliage emulates that of the *Acacia*. While yet the sturdy Oak remains unchanged, the Elm assumes a golden yellow, and the Ash is denuded by the first frosty night, ere

“The woodpath is carpeted over with leaves,
And the glories of autumn decay.”

As the foliage of the Ash affords a just criterion to the gardener when prudently to venture green-house plants into the open air, so the first change of the leaf should be considered the signal for withdrawing them. Many Ash trees bear loads of *Keys* every year, with very few leaves. These are unsightly plants, and very soon stripped of their foliage. In the darker ages the Ash was associated with various gross superstitions, whose vestiges may still be traced, as by Mr. White in Hampshire. “In a farm-yard near the middle of the village of Selborne, stands,” (in 1776) “a row of pollard Ashes, which by the seams and long cicatrices down their sides, manifestly show that, in former times, they have been cleft asunder. These trees, when young and flexible, were severed and held open by wedges, while ruptured children, stripped naked, were pushed through the apertures, under a persuasion that, by such a process, the poor babes would be cured of their infirmity. As soon as the operation was over, the tree was plastered with loam, and carefully swathed up. On the Plestor, an area near the church, lately stood a very old grotesque hollow pollard,

“Religione patrum multos servata per annos,”

and held in no small veneration as a *Shrew Ash*, prepared with certain ceremonies and incantations, so that its branches gently applied to the limbs of cattle supposed to be suffering cruel anguish from the baneful run of the shrew-mouse, produced instant relief. E.) The Ash flourishes best in groves, but it grows very well in rich soil in open fields. It bears transplanting and lopping. Horses, cows, sheep, and goats eat it: but it spoils the milk of cows, so that it should not be planted in dairy farms. In the north of Lancashire the tops of these trees are lopped to feed the cattle in autumn when the grass is upon the decline, the cattle peeling off the bark as food. In very dry summers the farmers about Cannock, Staffordshire, in default of grass, feed their cows with the leaves. (And such is the practice in the Tyrol, and was general in England before the improvement of grass lands, and also prevailed with the Romans. E.) In Queen Elizabeth's time, the inhabitants of Colton and Hawkshead Fell remonstrated against the number forges in the country, because they consumed all the loppings and croppings, the sole winter food for their cattle. *Penn. Tour.* 1772, p. 29.—When growing by the water side, and of some considerable age, its branches frequently hang down somewhat in the manner of the weeping Willow, (“stooping, as if to drink,” as the poet fancifully expresses it. E.) The roots run near the surface, and extend themselves to a great distance, whence it is destructive to the herbage of upland pastures; but if planted on the margins of ditches or low boggy meadows, the roots act as under-drains, and render the ground about them firm and hard; the wood is, however, in this case, but of little value. Mr. Woodward. (Ash is also used for oars and pulleys, and much employed by coachmakers. Mr. Boucher has proved by actual experiment that one acre of indifferent land, within reach of market, planted with six year old Ash plants, in rows six feet asunder, and the sets three feet distant in the row, cut every five or six years, will yield in twenty-three years, without any other expense than digging the ground the first few years, and cutting the coppice, at least £100. Mr. Arthur Young, in his *Irish Tour*, records several Ash trees of vast dimensions: at Donirey, near Clare, a hollow trunk, forty-two feet in circumference, and a little school kept within it. For beautiful representations of Ash trees, remarkable for size, we would refer to Strutt's *Sylva Britannica*, in which are depicted one in Woburn Park, measuring ninety feet in height, fifteen feet in girth, at three feet from the ground, and containing a grand total of 872 cubic feet of timber. Also the Ash at Carnock,

Rev. R. Relhan names a variety with pendulous branches, or *Weeping Ash*, (Welsh: *Anirywiaeth ymlaesawl*.) growing at Gamlingay, Cambridge-shire. Rev. Hugh Davies finds the same in Anglesey. E.)*

(CLADIUM. Bloss. none: *Glumes* chaffy, sheathing; the outer ones empty: *Drupa* without bristles at the base.

C. MARISCUS. Panicle repeatedly compound, leafy; spikes capitate; straw cylindrical, smooth, leafy; leaves prickly on the margin and keel.

E. Bot. 950.—Boccon. 72. 2.—Lob. Ic. 76. 1.—Ger. Em. 29. 3.—C. B. Th. 221.—J. B. ii. 504. 1.—H. Ox. viii. 11. 24.—Park. 1264. 1.—Mich. 31.—Pseudo Cyp.—Fructif. Scheuch. 8. 7—11.

Stem four or five feet high, unbranched, beautifully striated. Lower leaves two feet long or more, taper-pointed. Spikes mostly two-flowered, rusty brown. One flower becomes perfect, and produces a fruit almost

(planted about the year 1596, by Sir T. Nicholson, Lord Advocate, temp. James VI.) supposed to be the largest in Scotland; in height ninety feet, in circumference, five feet from the ground, nineteen feet, and twenty-one feet girth at four feet higher: in full vigour in 1825. The rudiments of the future tree may be distinctly traced on dissecting the seed, even without a high magnifying power, presenting an interesting subject to the admirers of such phenomena. The wood hath the singular advantage of being nearly as valuable when young as when old. It is hard and tough, and is much used to make the tools employed in husbandry, carts, wains, &c.: for the wheelwright, maiden poles, the first cuttings are esteemed most valuable: the after stoles, which may be cut every few years, are not of so good quality. The ashes of the wood afford very good pot-ash. The bark is used for tanning calf-skin. A slight infusion of it appears of a pale yellowish colour when viewed between the eye and the light; but when looked down upon, or placed between the eye and an opaque object, it is blue. This blueness is destroyed by the addition of an acid, and alkalies recover it again. An infusion of the leaves, from half an ounce to an ounce and a half, is a good purge, and a decoction of two drams of the bark, or of six drams of the leaves, has been given to cure agues. The Ash tree is judged by farmers to be peculiarly destructive to hedge rows. The seeds are acrid and bitter. In the church-yard of Loochaber, in Scotland, Dr. Walker measured the trunk of a dead Ash tree, which at five feet from the surface of the ground, was fifty-eight feet in circumference. A more correct representation of the peculiarly light and airy elegance of the Ash will scarcely be found, than that presented by Mr. H. W. Burgess, in his *Eidodendron*; a work to which, especially for pictorial effect, we have satisfaction in referring.

Among the various operations of insects, all tending to a destined end, by enforcing the inevitable law of nature—dust to dust—*Ips niger*, *griseus*, *rufescens*, and *nebulosus*, undertake the barking of the Ash; which tree also affords nourishment to *Lucanus parallelipipedus*, and *cylindricus*. *Apion* (*Curculio*) *vorax*, *Synodendron cylindricum*, and *Livia Frazini*, are likewise often found upon the Ash: the Leopard Wood-Moth, *Phalena prasinana*, *dominula*, and *Frazini*, and *Chermes Frazini*, feed upon it. Of vegetable parasites, *Hysterium Frazini*, Pers. (*Sphaeria sulcata* of Bolt. and With.) may be often observed bursting through the bark of dead Ash branches, representing, as Albertini observes, the coffee bean in miniature, tumid, very black, disposed in a subconcentric manner, grooved longitudinally. Pert. 32. Grev. Scot. Crypt. 72. Sowerby, 315. And *Cryptosphaeria millepunctata*. Grev. Scot. Crypt. 201. "Perithecia numerous, immersed beneath the epidermis, subregularly scattered, globose, black, orifice very short, obtuse, scarcely exserted, thecae acute at the apex, the sporidia linear, curved," is frequent on decaying small branches. E.)

* (This approaches a kind, which the gardeners propagate by engrafting, and whose reversed branches, when at full liberty to extend themselves, form an agreeable umbrageous bower. A curled-leaved monstrosity is also sold at the nurseries. E.)

as large as the spikelet. Hooker observes that the habit is very different from *Schaenus*, as is the fruit, being a nut with a remarkably thick shell, whose brown and glossy epicarp, or external skin, separates readily from the osseous part.

PRICKLY TWIG-RUSH, or BOG-RUSH. Welsh: *Ilymdreiniog, Pibfrwynen. Schaenus Mariscus.* Linn. With. Ed. 6. Willd. Fl. Brit. *C. Mariscus.* Br. Hook. Sm. Eng. Fl. In fens and marshes; sometimes near the sea; rare in Scotland; Restenat moss drained. Not common in England. Hell Kettles, near Darlington. Mr. Robson. Ellingham Fens, Norfolk; and near St. Olave's Bridge, Suffolk. Mr. Woodward. Llanddyffnan, &c. Anglesey. Rev. H. Davies. On moors about Cambridge. Mr. Crowe. At Weymouth, by the Fleet, in ditches communicating with the sea. Pulteney. By the river near Mutford Bridge, Suffolk. Mr. Wigg. Bot. Guide. Feckenham Bog, Worcestershire. Purton.

P. July—Aug. E.)*

DIGYNIA.

ANTHOXANTHUM.† *Cal.* husk two-valved, and one flower :
Bloss. husk two-valved, acuminate : *Seed* one.

A. ODORATUM. Panicle spiked, oblong-egg-shaped : florets longer than the awns, supported on short fruit-stalks.

Gram. Pasc.—Curt.—(Hort. Gram.—E. Bot. 647. E.)—Schreb. 5.—Mill. Ill.—Giseke. 2.—Fl. Dan. 666—Stillingf. 1. out of bloss.—Mus. Rust. iv. 2. 3—J. B. ii. 466. 1—Anders.—Barr. 124, single spike good—C. B. 44. 1—H. Ox. viii. 4. row. 2. 25. and 7. row. 3. 25—Spike and fructification, Leers, 2. 1—Seguier. i. 4. 2—Mont. 84.

(Stems a foot high, slender, rigid, smooth, with one or two joints. E.) *Blossom* double. The outer entirely different from that of any other grass, its outside covered to near the top with stiff brown hairs adpressed. The inner, which Linnæus calls the nectary, smooth, like the blossom of *Poa*. Spike not strictly so, the lower florets having short fruit-stalks. Filaments short when the blossom first opens, afterwards very long. Before the expansion of the blossom the anthers are partly inclosed in the nectary. Stem with two or three short leaves; joints shining. (Husks the length only of the shorter valve of the calyx. Miss Giddy. E.)

* **SPRING-GRASS. SWEET-SCENTED VERNAL-GRASS.** (Welsh: *Melynwellt perarogl y gwanwyn.* E.) Meadows and pastures, common: (attaining greatest perfection in deep and moist soils. E.) P. May—June.‡

* (So plentiful on the moors near Cambridge, that it is commonly used in that town for lighting fires. Mr. Crowe, in Fl. Brit. E.) It serves for thatching instead of straw, and often grows in such quantities in pools as to form floating islands. It is hurtful to cows.

† (From *ἄθος ἄθων*, flower of flowers; probably from its agreeable fragrance: while others derive the name from *ἄθος*, a flower, and *ξανθός*, yellow. E.)

‡ This is one of our earliest grasses and principally occasions the delightful smell of new mown hay. Mr. Curtis says that the leaves, rubbed betwixt the fingers, impart a grateful odour. Boccone states that a distilled water may be prepared from it, as the vehicle of some perfumes. If it be gathered whilst in blossom, wrapped in a paper and carried in the pocket, it retains the smell of new mown hay for a long time.

CLASS III.

TRIANDRIA.

MONOGYNIA.

(1) *Flowers superior.*

VALERIA'NA. *Bloss.* five-cleft; gibbous at the base: *Seed* one, (with a feathery radiating crown. E.).

(FE'DIA. *Bloss.* five-cleft, protuberant at the base: *Caps.* three-celled; two mostly abortive. *Seeds* solitary. E.)

BRYO'NIA. Stamens and pistil in separate flowers: *Bloss.* with five divisions.

Fert. Fl. Style three-cleft: *Berry* somewhat globular; many-seeded.

RUS'CUS. Stamens and pistil in separate flowers: *Bloss.* none: *Nectary* central, egg-shaped, open at the top.

(Mr. Thompson ingeniously observes, that, as the odours of leaves depend chiefly on the exhalation of their essential oil, they are often regulated by circumstances affecting the excretory ducts of the follicular glands. Thus the duct being closed by the pressure of the cells, turgid with sap, in the fresh stem and leaf of the *Anthoxanthum odoratum*, no odour is perceived; but it opens when these cells shrink, as the grass dries, and then the agreeable perfume peculiar to new hay is exhaled. E.) Cows, goats, sheep, and horses eat it. It abounds chiefly in wet lands, flourishing in a particular manner on peat bogs. (We cannot adduce a higher authority on this subject than that of Mr. Sinclair, who states, "Its merits in respect to early growth, continuing to vegetate and throw up flowering stalks till the end of autumn, and its hardy and permanent nature, sufficiently uphold its claim to a place in the composition of all permanent pastures. The superior nutritive qualities of its lattermath are a great recommendation for the purpose of grazing, the stalks being but of little utility, as they are generally left untouched by the cattle, provided there is a sufficiency of herbage." E.) The valves of the blossom adhere to the seed when it is ripe, and the jointed awn by its spiral contortions through the alternate moisture and dryness of the air, assisted by the awn and the hairs which cover the valves, which from the same cause act as so many levers, separate it from the receptacle, and lift it out of the calyx, at a time when the spike is necessarily kept in an erect situation by a throng of taller grasses surrounding them. A most beautiful and curious contrivance of Nature, without which, or some similar provision, the seed in wet seasons would be apt to vegetate in the husks, and the young plants in consequence become abortive. Rev. G. Swayne.

CRO'EUS. *Bloss.* resembling six petals, upright, open: *Summits* rolled in a spiral; coloured.

IRIS. *Bloss.* with six divisions; three outer segments reflexed: *Summits* like petals.

(2) *Flowers with valves like Grasses, and husk-like calyxes. Perfect.*

NAR'DUS. *Bloss.* two-valved: *Cal.* none: *Seed* invested with the permanent blossom.

ERIOPH'ORUM. *Bloss.* none: *Cal.* chaffy scales, imbricated all round: *Seeds* encompassed with very long silky hairs.

SCIR'PUS. *Bloss.* none: *Cal.* chaffy scales, tiled on every side: (*Style* simple at the base, deciduous. E.)

(**ELEO'CHARIS.** *Bloss.* none: *Cal.* tiled all round, uniform, expanded: *Seed* crowned and articulated with the dilated, hardened base of the style. E.)

CYPE'RUS. *Bloss.* none: (*Cal.* chaffy scales, imbricated, two-ranked, uniform, compressed: *Style* simple at the base, deciduous: *Seed* naked. E.)

SCHÆ'NUS. (*Bloss.* none: *Spike* of very few flowers: *Cal.* chaffy scales, fasciculated; outer ones barren: *Seed* roundish: *Style* simple at the base, deciduous. E.)

(**RHYNCHOSPO'RA.** *Bloss.* none: *Spike* of very few flowers: *Cal.* imbricated all round, with many smaller, empty, external ones: *Seed* beaked with the dilated, hardened, permanent base of the style. E.)

(3) *Flowers with valves like Grasses and husk-like calyxes. Stamens and pistils in different flowers.*

CA'REX. (*Barr. Fl.* *Catkin* imbricated: *Cal.* one valve or scale: *Bloss.* none.)

Fert. Fl. *Catkin* imbricated: *Cal.* one-valved: *Bloss.* none: *Summits* three, rarely two: *Seed* one, invested with a swelling tunic. E.)

(**KOBRE'SIA.** *Barr. Fl.* *Catkin* with opposite scales, imbricated in two rows: *Cal.* inner scale: *Bloss.* none.)

Fert. Fl. *Cal.* outer scale: *Bloss.* none: *Seed* one, naked. E.)

TY'PHA. *Catkin* cylindrical: *Bloss.* none.

Barr. Fl. *Calyx* indistinct, three-leaved.

Fert. Fl. *Catkin* under the barren flowers: *Calyx* soft hairs: *Seed* one, sessile on the hair like down.

SPARGANIUM. *Catkin* globose, (flowers in spherical dense heads. E.): *Calyx* three-leaved: *Bloss.* none.

Fert. Fl. Drupa juiceless, one-seeded.

[*Juncus conglomeratus* and *effusus*. *Salix triandra*.]

DIGYNIA.

(1) GRASSES.* *Flowers scattered; one in each calyx.*

PANICUM. *Cal.* two-valved, two-flowered: one floret barren, and one perfect.

(**CYNODON.** *Cal.* of two spear-shaped, acute, spreading, equal valves; shorter than the *Bloss.* of two compressed, very unequal valves: *Seed* coated with the hardened blossom. E.)

ALOPECURUS. *Cal.* two-valved: *Bloss.* one valve, undivided at the end: *Nectary* none.

* (For accurate discrimination of the seeds of the various Grasses, the agriculturist will do well to consult the elaborate descriptions, and lithographic representations, by Mr. Sinclair, in his *Hort. Gram. Woburnensis*, from which work, among various other interesting facts, we collect that the total number of distinct rooted plants in one square foot of the richest natural pasture of Devonshire, (fattening one ox, or three sheep, per acre), amounts to 1,000; of these are, natural grasses 940, creeping-rooted clover, and other plants 60, distinct species 20. In a water-meadow, well managed, on the same space, 1798 plants, 1702 grasses, 96 clover, &c. Botanists at present enumerate about fifteen hundred species of Grasses, of which one hundred and fifty are natives of Britain. Mr. Curtis, after many years experience, recommends the agriculturist rather to rely on a select few, than on too great a variety of Grasses; viz. for moist land, *Meadow Fox-tail*, and *Rough-stalked Meadow Grass*; for moist or moderately dry land, *Meadow Fescue*, or *Sweet-scented Vernal*; and for dry pasture, *Smooth-stalked Meadow Grass*, and *Crested Dog's-tail*. The latter he is inclined to consider inferior; see his "Practical Observations on British Grasses," with plates, a new edition, by Lawrence, 8vo. 1824. See also cuts in *Mag. Nat. Hist.* vol. i. 381, and our *Introduction to Class iii.* vol. 1. p. 132. As entire crops of grass are frequently deteriorated by rainy seasons, it may be well to recollect that a sprinkling of salt will render injured hay palatable to cattle.

Among the almost infinite variety of insects which haunt Grasses for shelter and sustenance, perhaps the one most likely to attract attention, both from its magnitude and beautifully verdant colour, is the *Gryllus viridissimus*, Barbut. t. 8., in Devonshire called the *Harvest-man*, from the season of its appearance; the female of which, at the extremity of the abdomen, is furnished with two laminae, representing the blade of a cutlass, with which she sinks her eggs deep in the earth. The male is destitute of such an appendage.

"Blest be the Pow'r, at whose command
The grassy tribes verspread the land
With 'sight-refreshing green;'—
Food for the flocks, and for the swain
The exhilarating golden grain,
To cheer his heart, his hopes sustain,
And gladden every scene."—S. H. E.)

- (KNAPP'IA. *Cal.* two-valved : *Bloss.* two unequal, very hairy, awnless valves. *E.*)
- (POLYPO'GON. *Cal.* two-valved, awned at the apex ; *Bloss.* included, outer-valve awned at the apex. *E.*)
- PHLE'UM. *Cal.* two-valved ; lopped, dagger-pointed, sessile : (*Seed* loose. *E.*)
- PHAL'ARIS. *Cal.* two-valved, keeled, equal, including the blossom.
- MIL'IUM. *Cal.* two-valved ; valves tumid ; rather unequal ; larger than the blossom : (*Seed* coated with the indurated corolla. *E.*)
- AGROS'TIS. *Cal.* two-valved ; valves acute, compressed, awnless : *Bloss.* shorter than the calyx, slightly hairy at the base : *Seed* loose. *E.*)
- DACTYLIS. (*Bloss.* awn-pointed, spear-shaped, keeled, compressed ; inner-valve folded, two-ribbed : *Seed* detached, oblong : *Cal.* compressed, taper pointed, unequal. *E.*)
- (SPARTINA. *Cal.* of two spear-shaped, compressed, clasping valves : *Bloss.* of two compressed, rather unequal, spear-shaped valves : *Nect.* none : *Seed* detached. *Styles* combined. *E.*)
- STY'PA. *Cal.* two-valved : *Bloss.* two-valved ; outer-valve ending in an extremely long awn, pointed at its base.

[*Scirpus palustris*, *fluitans*. *Schoenus compressus*. *Alopecurus monspeliensis*, *panicus*. (*Lagurus ovalus* never having been found in the properly British isles, nor nearer than Guernsey, which in geographical position must be considered as belonging to France, we have expunged the plant from our species, but inadvertently retained the genus in a former volume, an error which will be corrected, whenever an opportunity shall offer. *E.*)]

(2) GRASSES. *Flowers* scattered ; two in each calyx.

HOL'CUS. (One *floret* barren : *Bloss.* awned : *Seed* coated with the hardened blossom : *Cal.* keeled, two-valved. *E.*)

(HIEROCHLO'E. *Florets* three ; central one perfect, with two *stamens* ; lateral ones barren, with three : *Bloss.* permanently membranous : *Seed* loose : *Styles* distinct. *E.*)

AIR'A. *Florets* all perfect, without the rudiment of a third : *Cal.* two-valved.

[*Holcus mollis*.]

MELICA. (*Florets* one or two, with the rudiments of one or two intermediate ones: *Seed* coated with the hardened blossom. E.)

SESLE'RIA. *Involucr.* two-leaved: *Cal.* two-valved, with one to three florets: *Bloss.* outer valve tridentate; inner valve bidentate: *Styles* combined. E.)

[*Avena* clatior, flavescens, fatua. *Cynosurus*. *Dactylis* glomerata.]

(3) GRASSES. *Flowers* scattered, several in each calyx.

BRI'ZA. *Cal.* two-valved: *Bloss.* heart-shaped, valves blunt, tumid: (*Seed* depressed, attached to the blossom. E.)

PO A. *Cal.* two-valved: *Bloss.* egg-shaped, valves rather acuminate, (awnless: *Seed* free, covered by the blossom. E.)

(TRIO'DIA. *Bloss.* orbicular, expanded, obscurely ribbed, deeply cloven, with an intermediate point; both valves concave: *Seed* loose, depressed. E.)

FESTU'CA. *Cal.* two-valved: *Bloss.* oblong; valves sharp-pointed.

BRO'MUS. *Cal.* two-valved: *Bloss.* oblong; outer valve with an awn fixed below the point.

AVE'NA. *Cal.* two-valved: *Bloss.* oblong; valves with a jointed awn.

ARUN'DO. *Cal.* two-valved: *Bloss.* awnless, woolly at the base.

[*Dactylis* glomerata. *Melica* cærulea, *Aira* aquatica.]

(4) GRASSES. *Flowers* forming a spike, on a long and slender receptacle.

TRITICUM. (*Cal.* two-valved, solitary, mostly three-flowered; spike stalky, flexuose, toothed. E.)

HOR'DEUM. • *Involucrum* six-leaved, containing three florets: *Flowers* simple.

ROTTBÖL'IA. *Cal.* egg-spear-shaped, compressed, simple or with two divisions: *Florets* alternate, on a flexuose fruit-stalk.

E'LYMUS. *Involucrum* four-leaved, two-flowered: *Flowers* aggregate.

LO'LIIUM. *Involucrum* one-leaf, containing a single many flowered spiket.

CYNOSURUS. *Cal.* two-valved, containing many flowers: valves strap-shaped, tapering to a point, equal: *Nectary* two-leaved.

[*Carex. Alopecurus pratensis, alpinus, agrestis.*]

TRIGYNIA.

(1) *Flowers without petals. Stamens and pistils in separate flowers.*

[*Carex.*]

AMARANTHUS. *Cal.* three or five-leaved: *Bloss.* none. *Fert. Fl. Capsule* one-celled; splitting all round: *Seed* one.

(2) *Flower with blossoms; not husks.*

MONTIA. *Bloss.* one petal: *Cal.* two-leaved. (*Capsule* one-celled, two or three-valved. *E.*)

TILLÆA. *Bloss.* three or four petals: *Cal.* three or four-leaved: (*Caps.* three or four, two seeds in each. *Sm. E.*)

POLYCARPON. *Bloss.* five petals: *Cal.* five-leaved: *Caps.* three-valved.

HOLOSTEUM. *Bloss.* five petals: *Cal.* five-leaved: *Caps.* opening at the top.

ENNEAGYNIA.

EMPETRUM.* *Barren and fertile flowers on distinct plants: Cal. with three divisions: Bloss. three petals.*

Barr. Fl. Stam. long. Fert. Fl. Berry nine-seeded.

MONOGYNIA.

VALERIANA.* *Cal.* none: *Bloss.* one petal; superior, gibbous on one side at the base: *Seed* one, or else a three-celled capsule, (surmounted by feathery rays. *E.*)

(1) *Flower with one stamen.*

V. RU'BRA. *Flowers* caudate: *leaves* spear-shaped, entire.

* (From *valere*, to be strong in health, or to render one so: for, according to a father of Botany, "It hath beene had in such veneration, that no brothes, pottage, or physickall meates are woorth any thing, if this be not at one end." *E.*)

(*E. Bot.* 1531. *E.*)—*Riv.* 3. 2—*Dod.* 351. 1—*Lob.* *Obs.* 184. 2—*Ger. Em.* 678. 1—*Park.* 123. 11—*Ger.* 550. 1—*H. Ox.* 7. 14. 15—*J. B.* iii. 211. 2.

(*Stems* one to two feet high. Whole plant very smooth. *Bloss.* in a dense corymbose head; rose-colour. *Leaves* somewhat glaucous, rather succulent; upper ones sometimes toothed. *E.*)

RED VALERIAN. (Welsh: *Triaglog côch.* *E.*) In gardens; flowers sometimes white. *H. Ox. ih. p.* 102. On old walls and rubbish: Devon and Cornwall, common. Hudson. Sandy hills near Dartford, by the roadside. *Gent. Mag.* 1797. p. 217. (Old Walls at Oxford, Cambridge, and Norwich. Mr. Woodward. In the chalk-pits of Kent. Glastenbury Abbey. *E. Bot.* On the walls of Hulm Abbey, near Alnwick. Mr. Winch. On the East-gate, Warwick. Perry. Llanidan church-yard wall, Anglesey. Welsh Bot. Old walls at Inverleith. *Grev. Edin.* On the cliffs, Dawlish. *E.*) P. May—Aug.*

(2) *Flowers with three stamens.*

V. DIORICA. Barren and fertile flowers on different plants: radical-leaves egg-shaped; stem-leaves winged, leaflets very entire: somewhat serrated. Barren plants, with imperfect pistils.

(*E. Bot.* 628. *E.*)—*Curt.* 278—*Kniph.* 11—*Riv.* 2. 3. *V. minor*—*Fl. Dan.* 687. 1—*Walc.*—*Blackw.* 484—*Trag.* 62—*Matth.* 41—*Ger.* 917. 3.

Fertile plants with imperfect stamens.

Curt. 278—*Riv.* 2. 2. *Flor. Exig.*—*Fl. Dan.* 687. 2—*Clus.* ii. 55. 2—*Dod.* 350. 1—*Lob.* *Obs.* 411. 3—*Ger. Em.* 1075. 3—*Park.* 123. 13—*J. B.* iii. 211. 1—*H. Ox.* vii. 14. 5—*Mor. Umb.* 10. d. c.

(*Stem* erect, six to eight inches high. *E.*) All the leaves and leaflets more or less serrated. *Root-leaves* egg-shaped. *Stem-leaves* winged or wing-cleft; the terminal leaflet like the root-leaves. The barren flowers have sometimes a short minute pistil, at others no appearance of any. *Fertile flowers* have the summit three-cleft, and have either no stamens, or imperfect rudiments only. The blossoms in these are smaller than in the other; in both they have a tinge of red. In Portugal I have observed fertile flowers producing perfect seeds on the same plant with the barren flowers; the stamens in the latter varying from one to four, though in general each flower has only one stamen.

SMALL VALERIAN. (Welsh: *Triaglog bychan y gors.* *E.*) Moist meadows, not uncommon. P. May—June.

V. OFFICINALIS. Leaves all winged and toothed.

Curt.—(*E. Bot.* 698. *E.*)—*Woodw.* 96—*Ludw.* 99—*Kniph.* 5, the 2d figure—*Matth.* 40—*Clus.* ii. 55. 1—*Dod.* 349. 2—*Lob.* *Obs.* 411. 2—*Ger. Em.* 1075. 2—*Ger.* 917. 2—*Col. Phytol.* 26—*H. Ox.* vii. 14. 2—*Riv.* 1—*Fl. Dan.* 970—*Fuchs.* 857—*Trag.* 61.

* (From the progress of time and intercourse with foreign parts, so many exotics have become naturalized in Britain, that it is scarcely possible to define what may strictly be considered indigenous; and in the present state of scientific research, were we rigidly to adhere to aborigines, excluding those plants which there is reason to suspect may have been gradually propagated from gardens or other adventitious sources, our catalogue would be deemed extremely incomplete. *V. rubra* and *pyrenaica* are instances of these *dubie*, being more properly natives of the south of Europe, yet not unfrequently growing wild with us. *E.*)

(A much larger plant than the preceding. Stem three to four feet high, striated. Upper floral-leaves spear-shaped. Blossom pink, sometimes white, in large corymbose panicles. E.)

GREAT WILD VALERIAN. (Irish: *Keerin-Leana*. Welsh: *Llys Cadwgan*; *Gwell'n'ar dur*; *cynffon y capwellt*. E.) Banks of streams, hedges, woods, and marshes, common. P. June.

Var. 2. Leaves narrower.

Kniph. 5, the first figure—Riv. 2. 1—Garidel 96. at p. 520.

V. officinalis β. Fl. Brit. Dry heaths and high pastures.*

(**V. PYRENAICA.** Stamens three: stem-leaves heart-shaped, serrated, on foot-stalks; the uppermost pinnated.

Kniph. 7—E. Bot. 1591.

Stems two to three feet high, leafy, downy at the summit only. Leaves acute, sharply and unequally serrated; the radical and often the lower stem-leaves simple; the uppermost having one or two pairs of small, lanceolate leaflets. Flowers red or flesh-coloured, in a large, terminal corymbus. Spur obsolete. Seed furrowed, crowned with feathered rays. E. Bot.

* It is this latter variety which is in repute as a medicine. The root has a strong, and not an agreeable smell; its taste is warm, bitterish, and subacid; it communicates its properties to wine, water, or spirit; but it is best in substance, and may be taken from half a dram to two drams for a dose. There is no doubt of its possessing antispasmodic virtues in an eminent degree. It is often prescribed with advantage in hysterical cases; and instances are not wanting where it appears to have removed some obstinate epilepsies. (In addition to these observations, we transcribe the testimony of Dr. Rutherford, late Professor of Botany at Edinburgh, from a letter addressed to the Editor in 1800. "Never have I seen such beneficial effects follow from the use of any other remedy, in cases of Hysteria Epileptica as from it: indeed I have proved successful at last with it, when many other of the most celebrated and powerful antispasmodic medicines had failed. The root should be gathered on dry, hilly grounds; what grows on wet or marshy is far inferior in virtue to the former. The best time for collecting it is early in the season, either before, or just when the flower stem begins to push out. It should be thoroughly dried by hanging it up in a well ventilated situation, as soon as may be after collection. When in perfection, each root consists of a bundle of thick, plump fibres, of a bright brownish yellow colour, and very penetrating smell, nearly approaching to that of newly tanned leather. I prefer the medicine in powder to any other preparation, and give it in doses from a scruple to a dram three times in the day. No very conspicuous changes are induced, except mitigation of the original evil." Dr. Swediaur advises a little mace to be mixed with the powder. The recorded case of Fabius Columna, who was cured of an inveterate epilepsy by this plant, after various other means had entirely failed, seems first to have excited the attention of medical practitioners to its valuable qualities in this disease, and the experience of Dominicus Panarokus, half a century later, added to its reputation. It is supposed to be the *ps* of Dioscorides and Galen, by whom it was esteemed as a diuretic. Dr. Pulteney states that the druggists in London are provided with large quantities of this herb from Cranbourne Chase, E.) It is much to be regretted that ignorance of, or inattention to, these important particulars, should so frequently occasion this very valuable medicine to be used unsuccessfully, and laid aside with disgust. In habitual costiveness it is an excellent medicine, and frequently loosens the bowels when other stronger purgatives have been tried in vain. Cows eat the leaves: sheep are not fond of them. Cats are delighted with the roots, (and will even scratch up the soil to obtain access to them. E.) Rats are said to be equally fond of them, and the rat-catchers employ them to draw the rats together.

HEART-LEAVED VALERIAN. Discovered by Mr. G. Don about ditches and walls at Blair-Adam, Kinross-shire, in 1782, and afterwards gathered about Glasgow and Edinburgh; also found by Dr. Brown, of the University of Glasgow, at Daldowie, six miles from thence, and in woods at Cumbernauld and Pollok. P. July. *E. Bot. E.**)

(*FE'DIA*.† *Bloss.* five-cleft, protuberant at the base. *Caps.* crowned with the toothed calyx, without valves, of one to three fertile cells. *Seeds* solitary. Eng. Fl.

F. OLITO'RIA. Leaves linear, tongue-shaped, blunt. Flowers capitate. Capsule inflated, two-lobed.

Curt. 319—*E. Bot.* 811—*Ger.* 242—*Lob. Obs.* 412. 2—*Ger. Em.* 310. 2—*Park.* 812. 3—*J. B.* iii. 324. 1—*H. Or.* vii. 16. n. 36. f. 2—*Riv.* 6. 2—*Locusta minima*.

Stem about one foot high, dichotomous, spreading. *Leaves* irregularly toothed or jagged. *Flowers* pale blue, in small dense, terminal heads, with an involucre beneath of oblong bracteas.

As a species, this is readily distinguished from the following, observes Prof. Hooker, by the flowers being collected into thick heads, and more essentially by the shape of the capsule, which in the latter is narrow and pyriform, with a long beak. In this and probably in other species, two of the cells of the capsule are abortive, and shrink up when the seed is ripe, so as not to be easily discoverable.

LAMB'S LETTUCE. COMMON CORN SALAD. (Welsh: *Diadwyth*; *Gwylaeth yr oen*. *F. olitoria*. Vahl. Hook. Grev. Sm. *Valeriana olitoria*. Willd. *V. locusta*. Linn. *Curt. With.* to Ed. 7. Common in corn fields.

A. April, July.‡

(**F. DENTA'TA.** Leaves linear, tongue-shaped. Flowers solitary in the forks of the stem. Capsule ovate, ribbed. Crown erect.

E. Bot. 1370—*Fl. Dan.* 738—*Col. Ecphr. t.* 209. f. 2.

Leaves narrower than in the foregoing. *Bloss.* smaller, purplish, not capitate, but in wide and loose corymbs, with the bracteas few, narrow, not forming a regular involucre. *Fruit* different in shape, marked with five elevated ribs, and crowned with three unequal, almost foliaceous teeth. A larger plant than the preceding: from one foot to eighteen inches high.

OVAL-FRUITED CORN SALAD. Welsh: *Gwylaeth yr oen deintigwg*. *F. dentata*. Vahl. Hook. Grev. Sm. *Valeriana dentata*. Willd. *E. Bot.* With. Ed. 5 and 6. In corn-fields. Found in Cornwall by Mr. E. Forster, jun. in 1799. *Fl. Brit.* Also near South End, Essex; and by Mr. Hatton, near Rowling, Wingham, Kent. *E. Bot.* Fulwell Hills and Cocken, Durham. About Dartford. Mr. Winch. Corn-fields south of Esher, Surry, in abundance. Mr. J. Woods, jun. Frequent in the corn-fields of Sussex. Mr. Borrer. In fields near Steveley and Bishop Monck-

* (Scent of the root, and probably its qualities, agree with *V. officinalis*. Sm. *E.*)

† (*Fedia*, derived from *fedus*, an ancient word synonymous with *hædus*, a kid. *E.*)

‡ The young leaves in spring and autumn are eaten as salad, and are very little inferior to young lettuce. Cattle eat it. (Mr. Holdich, in his Essay on the weeds of Agriculture, states: "As judicious husbandry will render harmless this humble intruder on tillage lands, I shall just observe, that a small bed of rich garden earth, sown with the seeds in August, will supply an excellent portion of salad throughout the winter." *E.*)

ton, &c. Yorkshire. Rev. J. Dalton. Bot. Guide. Anglesey. Welsh Bot. Am's-brook, Meath. E. Murphy, Esq. Near Crafhole, Devon. Rev. J. Pike Jones. Abundant near Broomfield, Essex; near Dover; in corn fields at Thorne, Yorkshire. Mr. W. Christy. Fields between Newhaven and Caroline Park, Edinburgh. Greville.

June—July. E.)

BRYO'NIA.* *Cal.* five-toothed: *Bloss.* with five divisions.

Barr. Fl. *Anthers* united at the base.

Fert. Fl. *Style* three-cleft: *Berry* globose: mostly one-seeded.

B. DIOT'CA. Leaves hand-shaped; rough on both sides, with callous points: barren and fertile flowers on different plants.

Jac. Austr. 169—(*E. Bot.* 439. E.)—*Sheldr.* 77—*Mill. Ic.* 70—*Woodv.*—189. 9—*Blackw.* 37—*Tourn.* 15. 1—*Dod.* 400—*Lob. Obs.* 343. 3; *Ic.* i. 624. 2—*Ger. Em.* 869—*Gars.* 181—*Ger.* 720—*Fuchs.* 94—*J. B.* ii. 143. 2—*Cam. Epit.* 987—*Park.* 278. 1—*Trag.* 820—*Lon.* i. 209. 2—*Matth.* 1283.

(*Root* very large, white, and branched. *Stem* long, slender, branched, climbing, with tendrils. E.) *Leaves* not invariably hand-shaped, even the lower ones being truly lobed: (five-lobed, the lobes angular. E.) Our plants are all dioecious, and have red berries. I have never observed black berries: *Bryonia alba*, *baecis nigris* of Ray, is an addition of Dillenius. Woodw. The fertile flowers show the rudiments of five stamens at the insertion of the segments of the blossom, equal in number to that of the anthers of the barren flowers. *St. Barren and fertile plants* generally growing at a great distance from each other, never having seen them growing together but once. Leers. *Flowers* yellow white, with green streaks, (in axillary branches. E.) *Berry* red. *Seeds* three to six.

RED-BERRIED BRYONY. WILD VINE. Hedges and thickets. P. May.†

RUS'CUS.‡ Stamens and pistils mostly on different plants: *Bloss.* none: *Cal.* six-leaved: *Nectary* central, egg-shaped, open at the top.

Barr. Fl. *Anthers* united.

Fert. Fl. *Berry* three-celled: *Seeds* generally two in each cell.

R. ACULEA'TUS. Leaves egg-spear-shaped, with a penetrating prickly point: bearing the flowers on the upper surface; naked.

* (From *βρῡον*, (germino, pullulo), expressive of the vigorous and rapid growth of its annual stems from the perennial root. E.)

† The root is purgative and acrid; a dram of it in substance, or half an ounce of it infused in wine, is a full dose. A cold infusion of the root in water is used externally in sciatic pains. A cataplasm of it is a most powerful discutient. A decoction made with one pound of the fresh root is the best drastic for horned cattle. The active virtues of this plant seem to give it a claim to more attention than is now bestowed upon it. The root is sometimes formed into the human figure, (by the continued application of a mould, while the plant is yet growing, and sold for the real mandrake, (*Atropa mandragora* of warmer climes) with the advantage, we can assure our readers, of at least equal efficacy for all desirable purposes, and without risk of incurring the "fatal mandrake" groan." Goats eat it; horses, cows, sheep, and swine refuse it. Linn. E.)

‡ (Not understood; unless we admit the derivation of *De Theis*, from the Celtic word *Brusken*, referring to some such plant. E.)

(*E. Bot.* 560. *E.*)—*Woodw.* 237—*Kniph.* 1—*Sheldr.* 14—*Mill. Ill.*—*Trag.* 919—*Lon.* i. 78. 2—*Blackw.* 155—*Cam. Epit.* 935—*Park.* 253—*Gars.* 504—*Matth.* 1214—*J. B.* i. a. 579—*Dod.* 744—*Lob. Obs.* 362. i.; *Id.* i. 637. 2—*Ger. Em.* 907—*H. Or.* xiii. 5. row 2. 1—*Ger.* 759.

(A hardy, ever-green plant, with smooth leaves. *E.*) *Flower* not properly growing out of the leaf, but on a fruit-stalk from the disk of the leaf, which is immersed beneath the outer coat, from whence it may with ease be dissected. *Woodw.* *Stem* tough, woody, rigid, branched, scored, two to three feet high. *Blossom* yellowish green, small. *Berries* red. *Mr. Stackhouse* remarks, that the three outer calyx leaves are larger and rigid, the three inner smaller; these he considers as petals, and he found a barren flower falling from the plant, which had only three leaves, corresponding with those of the calyx.

BUTCHER'S BROOM. KNEE HOLLY. PRICKLY PETTIGREE. (*Irish: Bruslagh. E.*) Woods, thickets, and hedges. Hethel Woods near Norwich. *M. Crowe.* Heath near Lowestoft. *Mr. Woodward.* New Forest near Stony Cross. (East hill, Hastings. *Dr. Bostock.* Woods at Bothwell. Hopkirk. *E.*) S. March—April.*

(*Var.* 1. Branches wide apart; leaves elliptical, on both sides tapering.

R. aculeatus β. *Fl. Brit.* *R. laxus.* *Linn. Tr.* v. 3. but not sufficiently distinct to be named as a new species.

At Stoke, near Gosport, plentifully. *Mr. Caley. E.*)

CROCUS.† *Bloss.* with six equal divisions: *Summits* convolute.

C. SATIVUS. Sheath one valve, rising from the root: tube of the blossom very long: summit in three deep strap-shaped segments protruding beyond the blossom. *E. Bot.*

Var. 1. *officinalis.* *Leaves* narrower, rolled in at the edges. *Flowers* in autumn.

(*E. Bot.* 343. *E.*)—*Matth.* 69. 70—*Mill.* 111—*Trag.* 763—*Fuchs.* 441—*J. B.* ii. 637—*Walc.*—*Sheldr. (Saffron)*—*Tourn.* 181—*Ger.* 123. 1. 2—*Dod.* 213—*Lob. Obs.* 68—*Ger.* 151—*H. Or.* iv. 2. 1—*Blackw.* 144. 1—*Park. Par.* 167.

(*Blossoms* large, shorter than the leaves, purplish blue; *filaments* purple; *summits* deep orange, fragrant. *Germen* cylindrical. *E.*)

* In Italy it is made into besoms, with which butchers sweep their blocks. Fluxters place the boughs round their bacon and cheese to defend them from mice, the prickly leaves being impenetrable. It will not bear the winters of Sweden. (*Ettmüller* recommends it in scrophulous tumours and ulcers, a drachm of the powdered root to be taken every morning. The young shoots, which spear out of the ground like asparagus, were formerly eaten as such. It was considered to possess diuretic and deobstruent virtues, useful in the early stages of dropsy, though now excluded from the *Materia Medica*. The roots planted under tall trees in large plantations, will make useful ever-green clumps. This is a much more expeditious mode of cultivation than from seeds, which lie a year in the ground before they vegetate, and grow very slowly. *E.*)

† (Κροκον, a thread; from the conspicuous filaments of the stamens: or, according to fabulous history, from the youth *Croetus*, who was consumed by an ardent passion for *Smilax*, and metamorphosed into this flaming flower.

"Et Crocon in parvos versum cum Smilace flores

"Praterco." *Ov. Met.* lib. 4.

COMMON OR AUTUMNAL SAFFRON. SAFFRON CROCUS. (Irish: *Crogh*. Welsh: *Saffyr meddygawl*. *C. sativus*. Fl. Brit. *C. autumnalis*. E. Bot. *C. officinalis sativus*. Huds. *C. officinalis*. Hull. E. In meadows and pastures, suspected to be naturalized. About Cambridge, and Saffron Walden, Essex. Not cultivated there in 1796, nor could I find any traces of it. Mr. Turner. E.) In a meadow near the copper mills, Derby. Mr. Whately. (Common in meadows about Manchester. Mr. Caley. Breadfall and Duffield, near the banks of the Derwent. Pilkington. Anglesey. Welsh Bot. E.) P. Aug.—Sept.*

(*C. VERNUS*. Two leaves broader, with flat edges. Flowers in the spring. Summit thrice, short, wedge-shaped lobes, inclosed within the blossom. E. Bot. E.)

Jacq. Austr. App. 36—(*E. Bot.* 344. E.)—*Ger. Em.* 153. 1—*Clus.* i. 205. 2—*Ger. Em.* 156. 12—*Ger.* 125. 1.

Inserted on the authority of Hudson, but he has given no place of growth. It may however be found in almost every garden, both with blue and yellow blossoms in the month of March; (and few primeval flowers are more cheering and acceptable. E.)

SPRING SAFFRON OR VERNAL CROCUS. (Welsh: *Saffyr gwanwynawl*. *C. sativus*. β With. Ed. 2. *C. officinalis sylvestris*. Huds. Meadows near Nottingham. Deering. Meadows near Gorton, four miles from Stockport, Cheshire. Mr. G. Holme. Covers a field by the side of Mendham long lane, by Harleston, and has grown there for a great number of years. Rev. H. Tilney. The osier ground, at Beccles, Suffolk, but sparingly. Rev. G. Crabbe. Battersca Mill. Martyn, in Bot. Guide. On waste ground near Holyhead. Welsh Bot. I have found this plant in flower near Blackburn late in the autumn. Hull. E.) P. March. E.)†

* The summits of the pistils (*Stigmata Croci*. Pharm. Lond. sometimes called chives,) of *C. officinalis sativus*, carefully collected, and moderately dried, are the Saffron of the shops. That grown in England is larger than, and preferred to, all other. (Its cultivation was first attempted in the reign of Edward the Third. It is now principally obtained from a particular district in Cambridgeshire. The flowers are usually gathered early in the morning, after which they are carried home and picked. Five or six pounds of the wet saffron yield about one pound of dry; the finest kind, hay-saffron, is not pressed into a cake, but merely dried. An acre of land will produce ten or twelve pounds of saffron when properly managed. It affords a beautiful colour to water, wine, or spirit, and gives out the whole of its virtues to either. Dryden compares the rich tint it communicates to the dawn:

“Now when the rosy morn began to rise,
And wav'd her saffron streamer through the skies.” E.)

It hath been holden in high repute as a cordial; but modern practice pays no great attention to it, since it has been found to produce no sensible effect, even in doses greatly larger than those generally prescribed. (Of the efficacy or propriety of its use, even in the olden time, much difference of opinion seems to have prevailed. Temp. Henry viii. the colouring of long locks of hair called *glibbes*, and various articles of dress, with saffron, was strictly prohibited: while in Ireland, according to Lauremberg, “the Irish women dye their shirts with saffron to preserve them from vermin, and add strength to their limbs, which is a desirable end in this humid island.” The bulb of the saffron is liable to the attacks of *Sclerotium Crocorum*, a small parasitic tuber. E.)

† Whether the above-named stations be originally indigenous may, perhaps, be questionable: at least that the indefatigable Gerard deemed the plant exotic is to be inferred from the following passage of his great work, “That pleasant plant that

- (C. *NUDIFLORUS*. Tube of the blossom very long, leafless. Summit in three deeply lacinated segments, enclosed within the blossom. E. Bot.

E. Bot. 491.

This new species of *Crocus* appears first to have been clearly ascertained by the Rev. Mr. Beecher, of Southwell, Nottinghamshire, to belong to the British Flora, and by whom it was found in great profusion between Nottingham Castle and the river Trent, growing there intermixed with *C. vernus*. It is distinguished from either of the preceding species by the segments of the summit being deeply subdivided into from seven to twelve, generally nine, narrow linear lobes. The flowers, perfectly destitute of leaves, are in perfection early in October, and fade before the end of that month. The leaves do not begin to appear till some time in December, and are more erect than those of the other species, their margins scarcely revolute, colour paler, and their ends not decayed. E. Bot.

NAKED-FLOWERING CROCUS. It has since been discovered by Mr. Shepherd, Curator of the Liverpool Botanic Garden, a mile and a half from Liverpool on the road to Allerton. Pastures near Halifax. Rev. W. Wood. Bot. Guide. Shut-end, near Dudley. Rev. W. T. Bree. Pigwell fields and Lammas fields, Warwick. Mr. Perry, in Purton.

P. Oct. E.)

- (C. *RETICULATUS*. Stigma within the flower, in three obtuse, undivided segments; three outer segments of the corolla recurved; coat of the bulb strongly reticulated.

C. susianus. Curt. Mag. 652. Smaller than any other of our wild species. Bloss. whitish, pale blue, or yellow. Described by Smith in Eng. Fl. as having been found wild by Mr. Dawson Turner, in Barton Park, Suffolk.

P. March. E.)

IRIS.* Bloss. with six divisions, unequal, every other segment bent back as if jointed: *Summits* petal-like, two-lipped, edges at the base turned in.

bringeth forth yellow flowers, was sent unto me from Robinus of Paris, that painfull and most curious searcher of Simples." p. 126. ("Of all the properties of plants," remarks the Rev. G. White, "none seems more strange than their different periods of blossoming, especially when they happen to be congenerous, and indeed scarcely to be distinguished specifically, as in the Vernal and Autumnal *Crocus*. This circumstance is one of the wonders of creation, little noticed, because a common occurrence; yet ought not to be overlooked on account of its being familiar, since it would be as difficult to be explained as the most stupendous phenomenon in nature."

"Say, what impels, amidst surrounding snow
Congel'd, the *Crocus*' flamy bud to glow?
Say; what retards, amidst the summer's blaze,
Th' autumnal bulb, till pale, declining days?
The God of SEASONS, whose pervading power
Controls the sun, or sheds the fleecy shower:—
He bids each flower his quickening word obey,
Or to each lingering bloom enjoins delay." E.)

* (From the brilliancy of its colours and the graceful curve of its petals emulating the arch of *Iris* or the rain-bow. E.)

I. PSEUD-ALCORUS. Each alternate segment of the blossom smaller than the summit. (Seeds angular. E.)

Curt. 197—(*E. Bot.* 578. E.)—*Blackw.* 261—*Kniph.* 3—*Fl. Dan.* 494—*Woodv.* 40—*Dod.* 248. 1—*Lob. Obs.* 31. 1—*Ger. Em.* 50. 2—*Park.* 1213—*H. Oz.* iv. 6. 11.

(Roots large, fleshy, horizontal. Stem three or four feet high, upright. Leaves sword-shaped, erect, long, somewhat glaucous, striated, acuminate. E.) Valves of the calyx spear-shaped. Petals, the three outer and larger ones streaked with purple lines. Summits cut into fringed segments at the top. Flowers three together at the top of the stem: the two outer flowers having each one sheathing valve, and the middle flower two. Blossom yellow; (varying to a straw-colour, and sometimes white. Ray. E.)

FLUR-DE-LUCE.* WATER FLAG. YELLOW WATER IRIS. (Scotch: *Segs.* Irish: *Silistir.* Welsh: *Cammine' y dur*; *Gellhesgen.* Gaelic: *Seilis-deir.* E.) Banks of rivers, marshes, and wet meadows. P. July.†

I. FETIDIS/SIMA. Stem with one angle: (Seeds globular. E.)

(*E. Bot.* 596. E.)—*Dod.* 247. 2—*Lob. Obs.* 37. 1—*Ger. Em.* 60—*Park.* 256. 5—*C. B. Th.* 560—*J. B.* ii. 731. 2—*H. Oz.* iv. 5. 2—*Fuschs.* 794—*Matth.* 991—*Trag.* 904—*J. B.* ii. 731. 1—*Blackw.* 158—*Ger.* 53. 1—*C. B. Th.* 564.

* (A corruption of *Louis*, (and with still less propriety *Fleur-de-lis*, as having no affinity with the lily,) the seventh king of France of that name having adopted it on his shield during the crusades. Our third Edward transferred this emblem from the plains of Cressy to the arms of England, where it remained emblazoned, till superseded by the shamrock on the union with Ireland. E.)

† The juice of the fresh root is very acrid, and has been found to act as an aperient, after other powerful means had failed. *Edin. Med. Ess.* vol. v. art. B. It may be given for this purpose in doses of eighty drops, every hour or two, but the degree of its acrimony is so uncertain, that it can hardly ever come into general use. In some cases it proves diuretic. The fresh roots have been mixed with the food of swine bitten by a mad dog, and they escaped the disease, when others bitten by the same dog died raving mad. The root loses most of its acrimony by drying. Goats eat the leaves when fresh; but cows, horses, and swine refuse them. Cows will eat them when dry. The roots are used in the island of Jura to dye black. *Pennant's Tour*, 1772, p. 214. (Linnaeus asserts this plant to be decidedly injurious to all cattle, except goats.—*Mr. W. Skrimshire* has discovered that the seeds afford an excellent substitute for foreign coffee. Being roasted in the same manner, they very much resemble it in colour and flavour, but have something more of a saccharine odour, approaching to that of extract of liquorice. When carefully prepared, they possess much more of the aroma of coffee than is to be found in any of the leguminous or gramineous seeds that have been treated in the same way. Coffee made of these seeds is extremely wholesome and nutritious in proportion of half an ounce or an ounce to a pint of boiling water. *Month. Mag.* v. 27. The leaves smell like rancid bacon, but not so powerfully as do those of the following species. Few plants exceed the *Iris* in elegance of form and colour. Our gardens exhibit a rich variety; nor should we omit to encourage the Water Flag in ornamental grounds, where naturally, beside the limpid stream or translucent lake,

“ Amid its waving swords, in flaming gold the *Iris* towers.”

The agency of insects is indispensable to the fecundation of the different species of *Iris*. In these, as *Kölreuter* ingeniously remarks, the true stigma is situated on the upper side of a transverse membrane (*arcus eminens* of *Haller*), which is stretched across the middle of the under surface of the petal-like expansion or style flag, the whole of which has been often regarded as fulfilling the office of a stigma. The anther being situated at the

Stem two feet high, cylindrical, but angular on one side; as long as the *leaves* which cover it, and have a very fetid smell. *Germen* triangular, the angles furrowed. *Blossom* of a dull purplish colour; pencilled with darker veins. Claws of the *outer petals* wrinkled and plaited on the under surface. *Inner petals* larger than the summit, expanding. (*Seeds* orange coloured, polished. E.)

FETID GLADDON OF GLADWYN. FETID FLAG. (Irish: *Gloricum*, Welsh: *Llys r Hyllgryg*; *Llys r Hychgryg*; *yr Gloria*. *Iris fetida*. With. Ed. 4. E.) Near Hornsey; and about Charlton wood, Kent. Hudson. Near Braintree. Near Pershore. Nash. Bath Hills; Ditchingham, Norfolk. Woodward. (Woods and hedges about the farm house of Pen ucha'r Green, in the parish of Henllan, Denbighshire. Mr. Griffith. E.) In all the S. W. counties very common. (Priestholm Island. Rev. H. Davies. Chalk Hill near Hedsor Wharf, Bucks. Mr. Gotobed. In a grove on the right hand side of the road leading from Cambridge to Hinton Church, Tevers-

ham. Hedges at Warkton near Easingwold. Rev. Atchueacon Nelson. Bank at Little Nunwick, by Rippon. Mr. Brunton. Bot. Guide. At Jolley, Durham. Mr. E. Robson. Winch Guide. Abundant about Teignmouth, by the road side leading to Bishop's Teignton, &c. On the Flat Holmes Island, in the Severn-sea. About Under-cliff, near Blackgang Chine, &c. Isle of Wight. E.) P. June—July.*

base of the style-flag which covers it, at a considerable distance from the stigma, and at the same time cut off from all access to it by the intervening barrier formed by the *arcus eminens*, it is clear that, but for some extraneous, agency the pollen could never arrive at the place of its destination. In this case, the humble-bee is the operator. Led by instinct, or, as Sprengel supposes, by one of those honey-marks (*saft-maal*), or spots of a different colour from the rest of the flower, which may be considered as destined to guide insects to the nectaries, she pushes herself between the stiff style-flag and elastic petal, which last, while she is in the interior, presses her close to the anther, and thus causes her to brush off the pollen with her hairy back, which ultimately, though not at once, conveys it to the stigma. Having exhausted the nectary she retreats; and, in doing so, is pressed by the petal to the *arcus eminens*; but it is only to its lower, or negative surface, which cannot influence impregnation. She now takes her way to the second petal, and insinuating herself under its style-flag, her back comes in close contact with the true stigma, which is thus impregnated with the pollen of the first visited anther: and in this manner migrating from one part of the blossom to another, and from flower to flower, she fructifies one with pollen gathered in her search after honey in another. Whoever thus endeavours to unravel the wonderful contrivances of nature, cannot but sensibly feel, and feelingly exclaim,

“Author of all! How bright thy glories shine!
How pure, how perfect is thy least design!”

M. Sprengel found, that not only are insects necessary to fructify the different species of *Iris*, but that some of them, as *I. Niphium*, require the agency of the larger humble-bees, which alone are strong enough to force their way beneath the style-flag; and hence, as these insects are not so common as many others, this *Iris* is often barren, or bears imperfect seeds. See Entomology by Kirby and Spence, and Sprengel Entdecktes Geheimnis, &c. (E.)

* The juice of the root, both of this and the preceding species, is sometimes used as a sternutatory; but it is an unsafe practice. Violent convulsions have been the consequence. (Dr. Swediaur attributes several powerful qualities to this root, and particularly specifies its utility in hysteria, scrophuli, and dropsy. E.) Neither horses, sheep, nor cows eat it. The scarlet seeds displayed by the opening capsules give the hedge banks a gay appearance in autumn. The leaves when bruised smell like rancid bacon.

TRIANDRIA. MONOGYNIA. ERIOPHORUM

A var. has been observed with leaves striped.

NAR'DUS.* Cal. none: Bloss. two-valved: Nectary none.

N. STRIC'TA. Spike slender, straight; the florets pointing in one direction; (leaves thrice the length of their sheaths. E.)

(Hook. *Fl. Lond.* 175. E.)—*E. Bot.* 290—*Fl. Dan.* 1022—*Schreb.* 7—*C. B. Th.* 70—*H. Ox.* viii. 7. 8—*J. B.* ii. 513. 2—*Job. Ic.* 90. 1—*Ger. Em.* 1631. 3—*Park.* 1199. 5, 6, 7—*Spike, &c.*—*Leers.* 1. 7—*Scheuch.* 2. 10—*Mont.* 31.

Straw (five or six inches high, rigid, wiry, smooth, E.) with a single joint near its base, and one short bristle-like leaf. *Root-leaves* long, thread-shaped. *Leers.* *Spike* yellowish white, or violet-coloured. *Florets* all pointing to one side. (The only British example of a grass which has but one style to the germen. Hook. *Plant* tufted and surrounded at the base with the remains of old stems and leaves. E.)

HEATH MATWEED or **COMMON MATGRASS.** (Welsh: *Cawnen ddû*; *Câsgan bladurwr.* Heaths in Norfolk, frequent. Mr. Woodward. Malvern Chase. Mr. Ballard. Birmingham Heath. Stokes. Anglesey. Welsh Bot. Lilleshall pool dam, Shropshire. E.)

P. June—Aug.†

ERIOPHORUM.‡ Husks like chaff, tiled on every side: Bloss. none: Seeds encompassed by very long silky hairs.

E. VAGINATUM. (Stem triangular above; cylindrical below, with a swelling sheath: spike ovate: glumes membranous. Sm. E.)

Dicks. H. S.—Curt. 219—(*E. Bot.* 873. E.)—*Fl. Dan.* 236—*Scheuch. Prod. and App.* 7. 1—*J. B.* ii. 514. 2—*C. B. pr.* 23; *Th.* 188—*Park.* 1272. 5—*H. Ox.* viii. 9. row 3, 6—*Gr. junceum* *Ib.* 6. *Gr. junceoid*—*Park.* 1272. 2—*Ib.* 1—*Park.* 1189. 1—*Spike and parts of fructif.* *Scheuch.* 7. 1—3. *Mont.* 1. K.

Root leaves imperfectly triangular, sharp, with two of the sides scored. *Stem-leaves* cylindrical. *Sheaths* inclosing the straw; the uppermost purple at the base. *Straw* twice as long as the leaves; scored, cylindrical, but flat on one side. *Spike* egg-shaped, tiled, single. *Straw* about a foot high. *Spike* silvery-grey when in flower; when in seed very conspicuous from its copious, long, silky hairs, which facilitate the dispersion of the little triangular seeds, and form collectively a beautiful tuft.

HARE-TAIL COTTON-GRASS. MOSS-CROPS. (Gaelic: *Cainchean.* E.) Pent bogs and swampy moors. Near Lynn. Mr. Pitchford. Very fre-

* (From the Hebrew, signifying perfume or ointment, though not applicable to the British species; but more properly referring to an entirely different plant, viz. the Spike-nard of the ancients, supposed by Sir W. Jones to be the (*Valeriana*) *Jatámansi* of India. E.)

† This grass is stiff and hard to the touch, but being generally short, it eludes the stroke of the scythe, and takes off its edge, which makes it disliked by mowers. Goats and horses eat it. Cows and sheep are not fond of it. Rooks stock it up, for the sake of the larva of insects which they find at the root. (An inferior grass, with foliage too harsh and wiry to prove acceptable; but Mr. Sinclair, whose practical experience renders his remarks valuable, states that the straw being long without joints, and very fine, equal, and tough, induces him to consider it as probably the best grass for the supply of straw for the Leghorn plat. E.)

‡ (*Eriov.* wool, and *φῆρω*, to bear; the seeds being encompassed with long wool-like hairs. E.)

quent in all the northern Counties. Mr. Woodward. (Peat Bogs at Llynalel, Denbighshire, and on all the mountains of North Wales. Mr. Griffith. E.) Ancott bog, near Salop. Mr. Aikin. Birmingham Heath, in the marshy valley (since drained. E.) crossed by the foot road to Winsor Green. In Cornwall on wet moors, not uncommon. (Bogs near the road leading from Clovelly to Kilkhampton, Devon; and Dartmoor. On Bawsey Bottom, near Llym. Mr. Pitchford. Marshes at Hedington near Oxford. Dr. Maton. On Leath Hill Common near Dorking. Mr. J. Woods, jun. On Amberley Wild-brooks, Sussex. Mr. Borrer; and on Broadwater Common near Tunbridge Wells. Mr. J. Woods, jun. On Glastonbury and Burtle turf moors. Bot. Guide. On the summit of Cawsey Pike, Cumberland. Mr. Winch. Pentland Hills. Greville. E.)

P. Feb.—April.*

E. POLYSTACHION. Stem cylindrical; leaves flat, spear-shaped, point triangular: (stalks of the spikes smooth: hairs thrice the length of the spike. Sm. E.)

Dicks. II. S.—(E. Bot. 563. E.)—Vaill. 16. 2—Leers 1. 5.

(Stem two feet high, jointed, cylindrical except at the top. Leaves with a narrow, acute heel. Spikes five to eight, ovate, grey, pendulous after flowering. Glumes scariosc, greenish brown. E.) Spike smaller and more compact than in the next species; and the leaves being flat as well as shorter, the plants may be distinguished, though not in flower.

(BROAD-LEAVED COTTON-GRASS. Irish: *Keannan han*. Welsh: *Plu gwneungydd*; *Sidan y waun llydan-ddail*. E.) *E. polystachion* β. Linn. *

First distinguished from the next, which is our more common species, by Dickson. Bogs in Northamptonshire; near Dunstable; in Yorkshire, Cumberland, and Scotland. Linn. Tr. ii. 289. (In a bog at the back of Invercauld House, and in various parts of the Highlands, but not common. Mr. Brown. In the peat bogs of Denbighshire, and turbaries near Llyn Idwell, North Wales. Bingley. Near Baumaris. Rev. H. Davies. Bog at Hilton Castle, Durham; and at the foot of Derwentwater. Mr. Winch. Whey Sike, Teesdale Forest. Rev. J. Harriman. Alderbury Common, Wiltshire. Dr. Maton. Bot. Guide. E.) P. May—June.

E. ANGUSTIFOLIUM. (Stem nearly cylindrical: leaves strap-shaped, triangular; channelled towards the base: stalks of the spikes smooth: hairs four times the length of the spike. Sm. E.)

*Dicks. H. S.—(E. Bot. 564. E.)—Curt. 222—Vaill. 16. 1—H. Ox. viii. 9. row. 3. 1—Ger. 27. 1—C. B. Th. 61—Trag. 683—Garid. 44—Dod. 562. 2—Ger. Em. 29**—Barr. 12—J. B. ii. 514. 1—Parts of fructif. Mont. (Linagrast.) K. L. I. **

(Stem twelve to eighteen inches high: plant much more slender than *E. polystachion*. Silky hair most abundant in this species, remaining conspicuous through the summer. Smith observes, the very narrow triangular leaves afford a ready distinction. E.) Spikes about three upon each straw, which rises out of a sheath, formed by three brownish leaves, the outermost of which is much longer than the rest, and green at the

* (Sheep are said to be very fond of it, whence it is called *Moss Crop* in some countries. Curtis. It may be acceptable from its early herbage, but not as preferred to various grasses, though eaten in combination with them by other cattle also. The produce and nutritive qualities are inferior to those of *E. angustifolium*. Hort. Gram. E.)

end. *Leaves* sheathing the stem. (Mr. Caley tells me he has observed the spikes to be polygamous; and Sir Thomas Frankland has sometimes found this plant dioicous, in Lord Fauconberg's Park, Yorkshire.

COMMON MOOR-GRASS. MOSS-CROPS. COTTON-GRASS. (Welsh: *Sidan-g waun*; *Phu gwynydd cull-dail*; *cyffredin*. E.) *E. polystachion*. Huds. Curt. Lightf. With. ed. i. and ii. Moors, marshes, and bogs, not uncommon, (especially in the north. Northshore, near Bootle, Formby, &c. in the neighbourhood of Liverpool. Dr. Bostock. Anglesey. Welsh Bot. Pentland Hills. Grev. Edin. E.) Binningham Heath, (now inclosed. E.) Aqualate Meer, near Newport, covering several acres. P. June.*

E. ALPINUM. (Stem triangular, naked above the leaves, which are shorter than their sheaths: spikes oblong-ovate: glumes firm, strongly keeled. Sm. E.)

(*E. Bot.* 311. except the shoot with long leaves, which belongs to *Carex dioica*. E.)—*Fl. Dan.* 620—*Scheuchz.* 7. 4—*App.* 8.

Six or eight inches high, slender, triangular, jointless; rough when stroked downwards. *Sheaths* at the base scored, acuminate. *Spike* very small downy. *Scheuchz.* (*Hairs* few, not concealing the glumes. E.)

ALPINE COTTON-GRASS. Mountain bogs, rare. Found in the summer of 1791, on the moss of Restenet, (since drained. E.) three miles east of Forfar, by Mr. Brown in company with Mr. Don. (Mountains in Breadalbane. Mr. Somerville. Hook. Scot. E.) P. June.

(*E. CAPITATUM*. Stem round to the summit, invested with a tubular, swelling sheath: spike solitary, roundish: glumes membranous.

E. Bot. 2387.—*Fl. Dan.* 1502.

Leaves channelled above, convex beneath, with a solitary *Stem* about a span high, remarkably straight, much thicker as well as shorter than that of *E. vaginatum*, whose upper part is triangular. *Glumes* brown, opaque, the outer one so large as frequently to resemble an involucre.

ROUND-HEADED COTTON-GRASS. *E. Scheuchzeri*. Roth. *E. capitatum*. Schrad. A very alpine plant. Discovered by Mr. G. Don, by the side of a rivulet on Ben Lawers. P. Aug. E.)

(*E. GRACILE*. Stem cylindrical, with three slight angles: leaves triangular; channelled towards the base: spikes longer than the bractea: hairs twice the length of the spike. Sm.

E. Bot. 2402.

* This plant is useful in the Isle of Skye to support cattle in the earlier part of the spring, before other grasses are sufficiently grown. *Pennant's Tour*, 1774, p. 308. Poor people stuff their pillows with the down, and make wicks of candles with it, but it becomes brittle when quite dry. Attempts have been made in Germany to manufacture paper from this down, which might be procured in large quantities; but its brittle nature detracts from its utility. (Mr. Winch observes, that while the more delicate of the Grasses, not exceeding twenty in number, mixed with some few plants which are able to contend with them for possession of the soil, cover our meadows and pasture fields, the strong-rooted, harsh leaved Sedges, Cotton-grasses, Mat Grass, and small Club Rush, scantily clothe the elevated and boggy moors of the Cheviots, where no other herbage is to be seen, and during the summer months afford pasturage to numerous flocks of sheep. E.)

Stem slender, six inches high when in flower, twice as tall, like the other species, when in seed. *Leaves* few, narrow, much keeled at the back, grooved or channelled on the upper side. *Spikes* two or three, oblong, at first sessile, then pedunculated, longer than the involucre. *Glumes* oblong-ovate, greenish brown, obtuse, membranous, ribbed. Hook.

SLENDER MOUNTAIN COTTON-GRASS. *E. gracile*. Roth. Hook. *E. triquetrum*. Schrad. Host. P. July. E.)

(*E. pubescens* of Eng. Fl. distinguished by the stalks of the spikes being downy, appears questionable, and not yet sufficiently understood. E.)

SCIRPUS.* *Husks* chaff-like, tiled on every side: *Bloss.* none: *Seed* one, triangular, often woolly: (*Style* simple at the base, deciduous. E.)

(1) *Spike* single.

S. caespitosus. (Straw cylindrical, scored, naked, sheathed with numerous scales at the base: spike terminal: outer glumes largest, with leafy points.

E. Bot. 1029. E.)—*Scheuch.* 7. 18—*J. B.* ii. 523. 2—*C. B. Th.* 79—*Fl. Dan.* 167—*H. Ox.* 8. 10. row 3. 35—*Pluk.* 40. 6.

In dense tufts. *Stem* from two to six inches high. Length of the spike and of its lower scales, in some specimens, extremely uncertain, as long as the spike, in others not half so long, and sometimes considerably longer, the point of the outer valve being extended into a kind of awn. This species is best distinguished from the preceding by the green and leaf-like appearance of the upper sheaths at the bottom of the straw. (*Summits* three, rarely four. *Seed* with about six forked bristles at its base. E.)

SCALY-STALKED CLUB-RUSH. DEER'S HAIR. (Welsh: *Clwp-fwynen y fawnog*. Gaelic: *Cip-chuan-du*. E.) Turf bogs and dry heaths. P. June—July.†

S. pauciflorus. Straw cylindrical, scored, naked, sheathed at the base: spike terminal; with few flowers; longer than the outer glumes. E.)

Scheuch. 7. 19—(*E. Bot.* 1122. E.)—*Ger. Em.* 21. 3—*Park.* 1270. 7.

S. pauciflorus is very different in its habit from *S. caespitosus*, for, besides its growing single and not *caespitose*, the *stems* generally decline and separate from each other, instead of being upright and close together; the *stems* are also more rigid, of shorter growth, and the *flowers* fewer, as the name expresses. Woodw. (Smith also judges this plant to be perfectly distinct from *S. caespitosus*, with which Linnaeus and Hudson had confounded it; particularly in being almost wholly destitute of *scales* at the roots, in the *sheaths* being straight, blunt, and lopped, in the *lower glumes* being shorter than the spike, and in having *root-leaves*. Smith, however, suggests the idea, that what are here called leaves, ought perhaps rather to be considered as barren straws. Fl. Brit. *Seed* surrounded by a few bristles. E.)

* (From *sirpo*, to tie, or bind, as with rushes. E.)

† (Of some value on the Highland mountains, as spring food for sheep. Lightfoot E.)

CHOCOLATE-HEADED CLUB-RUSH. (Welsh: *Clwpp-fraynen goch-ddu*. E.) Highland mountains. Pentland Hills. Grev. Edin. Ellingham Fens, Norfolk. Mr. Woodward. (On Poringland Heath, near Norwich. Mr. Crowe. In ditches near Bungay. Mr. Woodward. Prestwick Carr, Northumberland. Mr. Winch. Hinton and Foulmire Moors, Cambridgeshire. Relhan. Bog on Epping Forest, between Walthamstow and Wanstead. Mr. E. Forster, jun. Bot. Guide. Houghton Moor, near Newbold, and Marshes near Beverley. Teesdale. Aberffraw, Anglesey. Welsh Bot. E.) P. August.

S. FLUITANS. (Straws cylindrical, alternate: stem leafy, branched, flaccid: summits two: seed destitute of bristles.

Dicks. H. S.—E. Bot. 216—Fl. Dan. 1082—H. Or. viii. 10. 31—Scheuch. 7. 20.

Spikes terminal, of few flowers. Stem flexuose, most slender in the lower part. Leaves awl-shaped, keeled, spreading at nearly a right angle with their sheaths; those under water almost capillary. Flower-stalks two to three inches long. Summits long and feathery. Sm. E.) Stems floating. Plant from six to eight inches in length.

FLOATING CLUB-RUSH OR CLUB-GRASS. (Welsh: *Clwpp-fraynen nofiudwy*. E.) Shallow waters on heaths, and in ditches. Charley Forest, in bogs and old gravel pits. Pulteney. In small rills of water about Newton Cartmel. Mr. Hall. Salesmoor, near Manchester. Mr. Robson. (On Putney and Hounslow Heaths. Hudson. In ditches near Cleadon, Durham. Mr. Winch. Anglesey. Welsh Bot. Braid Hill marshes. Grev. Edin. E.) P. July.

(2) *Spikes several: straw cylindrical.*

S. LACUS¹TRIS. Straw cylindrical, naked: spikes several, egg-shaped, on fruit-stalks, terminal: (bractes generally much shorter than the panicle. Sm.

Hook. Fl. Lond. 91—E. Bot. 666—Fl. Dan. 1142. E.)—H. Or. viii. 10. 1—Ger. 31. 3—C. B. th. 178—J. B. ii. 522. 2—Dod. 605. 1—Ger. Em. 35. 3—Park. 1191. 1—Leaves, Trag. 674. 1.,

(As a species, it is readily known from every other, by its great size (several feet in height), the roundness of the stem from the base to the summit, and its large panicle of spikelets, which rises above the involucre. Hook.

BULL-RUSH. In clear ditches, ponds, and the borders of lakes and rivers. P. July—Aug. E.) *

Var. 2. (Stem glaucous, two feet high. Panicle not higher than the bractea. Spikes more crowded, darker, with broader glumes, dotted with purple. Sm. E.)

* When fodder is exhausted, cattle will live upon it. Cottages are sometimes thatched, and pack-saddles stuffed, with it. Bottoms of chairs are commonly made of this rush. If cut at one year old it makes the fine bottoms: coarser are made of it at two years old; and such as are still older, mixed with the leaves of *Iris pseud-acoris*, make the coarsest of all. Mats are likewise formed, either of *S. lacustris* alone, or mixed with the aforesaid leaves. (Employed to a great extent in filling up the seams between the staves of casks. In hot weather the Tartars lie upon mattresses made of these rushes. Fl. Lond. E.) Goats and swine eat it. Cows and sheep refuse it.

E. Bot. 2321. E)—*Ger.* 31. 4—*C. B. Th.* 181.

LESSER BULL-RUSH. (GLAUOUS CLUB-RUSH. Irish: *Beug Aulain*. Welsh: *Tost-frwynen arfor.* *S. lacustris* β . Huds. Hook. Fl. Brit. *S. glaucus*. Eng. Fl. Salt marshes and ditches, not uncommon. P. Aug. E.)

Var. 3. (Upper part of the stem bluntly triangular; lower part perfectly cylindrical. Sheaths without leaf-like terminations; bracteas pungent, channelled, erect.

Hook. Fl. Lond. 79—*E. Bot.* 1983. E.)—*H. Or.* viii. 10. 2.

BLUNT-EDGED CLUB-RUSH. DOODY'S FURROWED BULL-RUSH. Var. 3 Huds. *S. lacustris*. γ Fl. Brit. *S. carinatus*. *E. Bot.* Fl. Lond. Rivers, pools, fens, and ditches, common. P. July—Aug.

S. HOLOSCHÆNUS. Straw cylindrical, naked: spikes nearly globular, numerous, closely compacted: involucre two-leaved, unequal, acuminate; (leaves channelled: seed without bristles. E.)

(*E. Bot.* 1612. E.)—*H. Or.* vii. 10. 17—*Mich.* 31. (*Scirpoides*)—*Scheuch.* 8. 2. 5—*Pluk.* 40. 4—*C. B.* 174—*Park.* 1194. 4. (not Fl. Dan. 154.)

Stems firm, rushy, two or three feet high. *Leaves* radical, linear, smooth, marked with a white channel on their upper side. E.) The globular heads larger than large peas, supported on fruit-stalks of various lengths from the side of the stem, distinguish this at first sight from every other species. (Varies greatly in luxuriance of growth. E.)

ROUND-HEADED CLUB-GRASS. Sea coast, rare. Braunton Boroughs, Devonshire. Rev. Dr. Goodenough, (covering nearly half an acre. On the shores of Hampshire; and near the sea side below Watchet, Somersetshire. Bot. Guide. P. Sept. E.)

Var. 2. Straw cylindrical, naked; head lateral, compact; floral-leaf reflexed.

Jacq. Austr. 448—*Barr.* 255. 3—*Head*; *Scheuch.* 8. 6—*Pluk.* 40. 5.

Straws the thickness of a thread. Linn. Frequently many-headed. *Scales* egg-shaped, sharp, concave. *Jacq.*

(*S. romanus*. Linn. according to Smith; but not to be specifically distinguished. E.) Moist meadows. Marshy places near Throgmorton, Worcestershire. Hudson.

S. SETACEUS. Straw naked, bristle-like: spikes lateral, mostly single, sometimes in pairs: terminal spike sessile: (seed furrowed, without bristles.

Hook. Fl. Lond. 97—*E. Bot.* 1693. E.)—*Fl. Dan.* 311—*Leers.* 1. 6—*Roth* 15. 5 and 6—*H. Or.* viii. 10. 23—*Park.* 1270. 10 and 9.

Leaves setaceous. *Straws* numerous; as thick as the leaves, but twice as long. *Spike* one, rarely two, terminal, egg-shaped. *Lowermost scale* awl-shaped, pale, as long as the spike. Linn. Plant from two to six inches high. *Spikes* greenish brown, with a rosy tinge, (surmounted by a leafy bractea. Sm. E.)

BRISTLE-STALKED CLUB-RUSH. SMALL PLYMOUTH RUSH-GRASS. LEAST CLUB-GRASS. (Welsh: *Clwp-frwynen fechan*. E.) Wet sandy ground, common. A. July—Aug.

(3) *Straw triangular: spikes in panicles: panicle naked.*

S. TRIQUETER. *Straw triangular, naked: spikes lateral, egg-shaped, blunt, nearly sessile or on fruit-stalks: sharp point of the straw upright: (summits two: seed smooth.*

Hook. Fl. Lond. 92—E. Bot. 1694. E.)—Pluk. 40. 2.

(*Stem a yard high, angles more or less acute. Spikes generally accompanied by a small floral leaf; sometimes quite sessile. E. Bot. E.*) The height of the pointed top of the straw above the clusters of florets varies in different specimens. Roth, by a nice discrimination, adds, "this species has not a triangular culm with sharp edges, but one of three sides with blunt edges." *Annals of Botany*, v. 1; and thus extending from the base to the summit. E.)

TRIANGULAR CLUB-RUSH. POINTED OR THREE-SQUARE CLUB-RUSH. Sea shore; banks of large rivers exposed to the tide, as the Thames, both above and below London. (Acle Dock, between Norwich and Yarmouth. Mr. Woodward. E.) P. July—Aug.

(4) *Straw triangular: spikes in panicles: panicle leafy.*

S. SYLVATICUS. *Straw triangular, leafy: umbel leafy: fruit-stalks naked, treble compound: spikes crowded: scales entire.*

Kniph. 12—(E. Bot. 919. E.)—C. B. Th. 90.—H. Or. viii. 11. 15—J. B. ii. 504. 2—Fl. Dan. 307—Lob. Adv. 28. 1—Ger. Em. 30. 5—Park. 1171. 2—Branch of the umbel, Leers, t. 4.

Leaves very broad, keeled; terminating in a blunt, coloured projection: the edges and keel rough with strong hairs. Seeds encompassed with about six short hairs rising from the base. (Spikes terminal, most of them clustered, small, ovate. Stamens slender. Style deeply three-cleft. E. Bot. Stem a yard high, very leafy. Spikelets very small, numerous, dark green, ovate. E.)

MILLET CYPERUS GRASS. WOOD CLUB-RUSH. Wet shady places. Ditchingham, Norfolk. Mr. Stone. Near York. Mr. Aikin. A little east of Breakinbridge over the South Esk, on the south side. Mr. Brown. (About Kendal. Mr. Gough. Between Hampstead and Highgate. Mr. Groult, in E. Bot. Garn Dingle, Denbighshire: between the cave and the river that runs from Henllan Mill. Mr. Griffith. By the river Stour, about Blandford; near White Cliff Mill, &c. Pulteney. On the banks of Team, and in Ravensworth woods, Durham. Winch Guide. Oversley Mill-pond. Purton. Edgbaston Pool, near Birmingham, plentiful. E.)

P. July.

S. MARITIMUS. *Straw triangular: panicle compact, and leafy: scales of the spiket three-cleft; the middle segment awl-shaped: (spikes clustered: summits three. E.)*

Var. 1. *Round-rooted, (swelling into knots or tubers. E.)*

C. B. Pr. 24. Th. 215—Park. 1263. 4—H. Or. viii. 11. 9—Panicle, Scheuch. 9. 9.

Var. 2. *Spreading.*

Curt. 281—(E. Bot. 542. E.)—Ger. 20. 7—C. B. Th. 86—Ger. Em. 22. 7—Park. 1266. 6. right-hand plant—H. Or. viii. 11. 25—J. B. ii. 495. 1: left-hand plant—Dod. 338. 1—Lob. Obs. 39. 2—Branch of the panicle, Scheuch. 9. 7. and 8.

Var. 3. Tufted.

Fl. Dan. 937—*Ger. Em.* 22. 7—*Park.* 1266. 6. left-hand plant—*J. B.* ii. 498. 1. right-hand plant.

(*Stem* two or three feet high, striated, roughish at the angles, leafy at the base and summit. *Leaves* sheathing, keeled, dark green, rough-edged, taper-pointed. *Sm.* E.) *Panicle* sometimes branched, at others simple. *Huds.*; as in the fig. on the left hand in *Park.* and that on the right in *J. B. St.* *Spikes* oblong; colour of rusty iron. *Seeds* the same colour, egg-shaped, compressed, acuminate; two or three whitish, lopped, chaffy substances, shorter than the style, rise from the base of the germen. In some specimens the *spikes* are sessile, and the *stem-leaves* shorter than the straw; in others they are longer; and in some the spikes are either sessile, or on fruit-stalks. *Scop.*

SALT-MARSH CLUB-GRASS. (Welsh: *Clup-frwynen y morfa.* E.) Sea-coast. (Salt-marshes, or in the vicinity of saline springs, not uncommon. E.) Shirley Wych, near Stafford. Stokes. (Maryport and Allonby, Cumberland. Hutchinson. Boscley, Warwickshire, whence Purton infers there must be salt-springs near that spot; but, according to Curtis, it is frequently found where the water is not salt. E.) P. Aug.*

(ELEOCHARIS. *Bloss.* none. *Cal.* imbricated all round. *Seed* crowned and articulated with the dilated hardened base of the style. Br. E.)

(*E. PALUSTRIS.* Straw cylindrical: root creeping: summits two: seed lenticular, most convex on one side.

Fl. Dan. 273—*E. Bot.* 131: but erroneously represented with three stigmas: —*Lob. Obs.* 44. 1—*Ger. Em.* 1631. 5—*Park.* 1196. 1 and 2—*H. Ox.* viii. 10. 32. and row 3. fig. between 33 and 34—*Spike* only, *Scheuch.* 7. 17—*Dissected flower and a spike, Leers.* 1. 3.

Stems many together, erect, as thick as a crow quill, from six to twelve inches high, each invested at the base with two or three tight, cylindrical, reddish sheaths. *Leaves* none. *Spike* egg-oblong, acute, half an inch long. *Summits* certainly but two, downy, the length of the style, whose base is greatly dilated, but its point of attachment to the germen is not thicker than the upper part of the style. *Seed* yellow, polished, crowned by the base of this style, and subtended by from three to five bristles, about its own length, rough, with dedexed teeth. Eng. Fl.

CREeping SPIKE-RUSH. (CLUB-RUSH. Welsh: *Clup-frwynen y gors.* E. *palustris.* Br. *Scirpus palustris.* Linn. With. Banks of rivers, ponds, and ditches, frequent. P. June—July. E.)†

* Cows eat it. The roots, dried and ground to powder, have been used instead of flour in times of scarcity. (They are sweet to the taste, and being larger than those of *Eleocharis palustris*, might be more worth collecting as food for pigs. This is supposed to be the plant known as a very noxious weed in certain valuable pastures bordering the Isle of Thuret, and there denominated *Spurt-grass*. The root creeps powerfully, and palliative remedies are of no avail. The only effective mode of clearing the land is to pare and burn; take a course of crops, and let the hand and fork assist the plough and harrows. Sinclair.

† Swine devour the roots greedily when fresh (for which purpose they are collected by the Swedish peasants), but will not touch them when dry. Goats and horses eat it. Cows and sheep refuse it.

(E. MULTICAULIS. Straw cylindrical: seed acutely triangular, as well as the permanent base of the style.

E. Bot. 1187.

Whole plant rather smaller than the preceding. *Stems* very numerous, eight or ten inches high, with one or two purplish sheaths at the base. *Spike* smaller, more acute and slender, than in the last, and rather darker coloured. One or two of the lower flowers often viviparous. *Seed* smaller and browner than that of *E. palustris*, having a triangular beak. At the base of the germen are five or six rough bristles, more or less deciduous. Eng. Fl.

MANY-STALKED SPIKE-RUSH. Welsh: *Clwp-frwynen galafawg*. *Scirpus multicaulis*. Fl. Brit. With. Ed. 6. *S. palustris*, β minor. Wahl. Hook. Linn. Fl. Lapp. Turf bogs, and wet commons, not very uncommon either in Scotland or England. First noticed in the Isle of Skye, by Mr. John Mackay, in 1794, and in England by Mr. E. Forster. We have specimens from Mr. Winch, who is inclined to consider this plant merely a variation of the preceding. In general appearance, they are alike, and the distinctive characteristics, above stated, have been questioned by other authorities. P. July. E.)

(E. ACICULARIS. Summits three: seed numerously furrowed, without bristles at the base: filaments permanent.

Hook. Fl. Lond. 49—E. Bot. 749—Fl. Dan. 287—H. Ox. viii. 10. row 3. 37—Plott's Ox. f. t. 9. f. 3—Pluk. 40. 7.

Forms a dense turf, from one to four inches high. *Straw* and barren stems, (sometimes taken for *leaves*, of which properly there are none,) as fine as a horse hair; according to Smith decidedly quadrangular; to Hooker, compressed, grooved. We have now several specimens before us, yet so slender and setaceous is this minute rush, that even with the aid of the magnifier we should scarcely venture to decide this point, though we are inclined to believe that the stem does in fact assume both forms. *Glumes* acuminate, brown. *Seed* whitish, egg-oblong, furrowed longitudinally, having a small blunt beak. This plant has been by different authors assimilated with *Cyperus*, according to the suggestion of Retzius; with *Scirpus* more generally, and recently with the new genus *Eleocharis*. Its characters must be admitted to be somewhat anomalous; and the absence of *setæ* at the base of the seed, which bristles, together with the seed being crowned with the permanent base of the style, are essential constituents, render us apprehensive it will scarcely find a resting place here.

LEAST-SPIKE-RUSH. SLENDER CLUB-RUSH. Welsh: *Clwp-frwynen leiaf*. *Scirpus acicularis*. Huds. Lightf. Hook. Sm. Fl. Brit. *Cyperus acicularis*. With. Ed. 6. Watery heaths, marshes, and bogs. Malvern Chase. Stokes. Epping Forest, near Wanstead. Mr. E. Forster, jun. Fl. Brit. Abundant in Anglesey. Rev. Hugh Davies. By Loch Clunie, Perthshire. Mr. Winch. Margin of Loch Foy, Derry. E. Murphy, Esq. P. Aug. E.)

CYPERUS.* *Husks* chaff-like: tiled in two rows. *Bloss.* none. *Seed* one: naked.

C. LON'GUS. Stem triangular: umbel leafy, more than doubly compound: fruit-stalks naked: spikes alternate.

* (Κυπαρος, a vase; in allusion to the form of the root. E.)

(Jacq. *Pl. Rar.* 207—*E. Bot.* 1309. E.)—*H. Ox.* viii. 11. 13—*Fuchs.* 453—*Trag.* 915; (improperly referred by *C. B.* to his *C. rot. vulg.*)—*J. B.* ii. 501. 1—*Matt.* 26. left half of the fig.—*Ger.* 28. 1—*Dod.* 338. 2—*Job. Obs.* 40. 1—*Ger. Em.* 30. 1—*Park.* 146. 3. (descr. n. 4.) *C. B. Th.* 216—*Blackw.* 316—*Branch of a panicle, Scheuch.* 8. 12.

(*Stem* two to three feet high, with a very large umbel. E.) *Fruit-stalks* sometimes twelve or thirteen, forming a sort of umbel, the outer spokes of which become gradually shorter and shorter. *Spikets* slender, chesnut-coloured. Scop.

SWEET CYPRUS. ENGLISH GALINGALE. Isle of Purbeck, near a chapel on the side towards Portland Island. Ray. (Diligent inquiry has failed to find it there. Pulteney. E.) Not found on St. Faith's Bogs, as mentioned by Huds. Ed. 2. (By a little rivulet that runs into Whitsand Bay, between St. David's town and St. David's Head, the only certain British station of this plant. July 25, 1775. Sir J. Cullum, Bart. Never found near Norwich. Fl. Brit. It has since been gathered in an old fish-pond at the back of a cottage at Walton in Gordano, Somersetshire, by Mr. Dyer. E. Bot. E.) P. July.*

(*C. fuscus.* Umbel compound, with three unequal leaves beneath: spikes crowded, spreading every way: stigmas three: straw triangular.

Hook. Fl. Lond. 85—*Fl. Dan.* 179—*Leers.* 9. t. 1. f. 2.

Stems about six inches high, smooth and pliant. *Spikes* numerous. Gl. brown, more or less dark, pale at the keel; the lower ones gradually deciduous with the seed. *Stemens* two. Hook. though other authors describe them as three.

BROWN CYPERUS. *Cyperus fuscus.* Linn. &c. Discovered by A. H. Harworth, Esq. on the sides of a ditch in a meadow half a mile from Little Chelsea. A. Sept.

Mr. W. Christy has favoured us with a specimen, (also from the neighbourhood of Little Chelsea), of what we are disposed to consider a diminutive variety of *C. fuscus*, not more than three inches high, and greatly resembling *Moris. H. Ox.* 8. t. 11. f. 38. "*C. longus minimus pulcher panicula compressa nigricante.*" E.

SCHÆNUS†. *Husks* chaff-like, of one valve, crowded, the outer ones barren. *Bloss.* none. *Seed* one; globose within the husks. *Spike* of very few flowers.

(*S. nigricans.* Straw cylindrical, naked: spike an egg-shaped head: involucre, two-leaved, one valve awl-shaped, longer than the other.

Dicks. H. S.—*E. Bot.* 1121—*H. Ox.* viii. 10. 28—*Fructif. Scheuch.* 7. 12. 14.

About a foot high. *Root* of strong fibres, crowned with black scales or sheaths, remnants of old leaves. *Leaves* setaceous, rigid, shorter than the straw head of flowers, formed of several dark purplish spikelets.

* The root is agreeably aromatic to the smell, and warm and bitter to the taste. Modern practice disregards it; but perhaps it is not inferior to some more costly medicines brought from abroad.

† *Synaves*, a rope; for making which this plant is adapted. E.)

Scales two-rowed. *Spike-stalk* flexuose, each seed lying within the corresponding curvature. *Summits* three, dark purple. *Seed* of a pearly lustre.

BLACK BOG-RUSH. Welsh: *Corserwynen ddŵ.* *S. nigricans.* Linn. Willd. Sm. Hook. *Cyperus nigricans.* With. Ed. 7. Moors and bogs. In Purbeck, and on Canford and Wareham heaths. Pulteney. Feckenham moors; Coleshill bog. Purton. Bleasley and Fountain dale; Bullwell and Papplewick, Notts. P. June. E.)

S. COMPRESSUS. Straw sub-cylindrical, but tending to triangular; naked: spikets in two opposite rows: involucre one leaf: florets with one husk: seed with bristles at the base. E.

Dicks. H. S.—(E. Bot. 791. E.)—*Leers.* 1. 1—*Pollich.* 1. 2—*Pluk.* 34. 9—*Mich.* 31. *Cyprella.* K.—*Scheuch.* 11. 6.

Straws cylindrical, somewhat flattened; below the spike three-sided and rough. *Involucre* scarcely longer than the spike. *Little spikes* alternate. *Scales* fixed without any order to the receptacle. *Summits* two. *Seed* surrounded with six rough bristles. *Leers.* (*Root* fibrous, rather creeping. *Stem* about a foot high. Fl. Brit. E.) *Involucre* either half as long, equally long, or twice as long as the spike. Its two-rowed spike would almost induce a reference to the genus *Cyperus*, did not a more accurate examination support its present arrangement: (and Professor Hooker observes, both in regard to this and the following species, that the glumes being, all but the lower one, fertile, might assimilate with *Scirpus*. E.)

COMPRESSED RUSH-GRASS. *S. compressus.* Linn. (Vahl. Hook. Grev. *Carex uliginosa.* Linn. *Scirpus Caricis.* Willd. Roth. Sm. Eng. Fl. E.) Turf bogs. Near Ditchingham Bath, Norfolk, and frequent in Suffolk. Mr. Woodward. (Marsh a mile west of Prestatyn, Flintshire. Mr. Griffith. Bootle north shore, near Liverpool. Dr. Bostock. Hinton Moor, near Bottisham Load, Cambridgeshire. Relhan. Hell-beck and Findale Fell, Brampton. Hutchinson. Bogs between Ryhope and the sea, Durham. Mr. Winch. Ham Ponds, Kent. Dillwyn. Sea-coast near Bambrough. Mr. Winch. Common upon Farnham Mires, and elsewhere near Knaresborough. Rev. J. Dalton. Bot. Guide. Dumbarton Castle, by the river side. Hook. Scot. E.) P. July.

S. RU'FUS. Straw sub-cylindrical, spikes aggregate, two-ranked, few-flowered: leaves channelled, setaceous: seed without bristles. E.)

(*Dicks. H. S.*—E. Bot. 1010. E.)—*Lightf. Fl.* 24. 2.

(Allied to the last, especially in the distichous spikes; but much slenderer. *Leaves* much shorter, never plane. *Spikes* ovate, dark brown, of five or six spikelets, each of three or four flowers. *Glumes* more obtuse. Hook. E.)

TAWNY RUSH-GRASS. (Welsh: *Corserwynen rudd.* *S. rufus.* Huds. Fl. Brit. Vahl. Hook. Grev. *S. compressus* var. *Lightf. S. ferrugineus.* With. Ed. 2. This has often been described for *S. ferrugineus*, which I believe has never been found in Britain. Sm. *Scirpus rufus.* Schrad. Sm. Eng. Fl. E.) Marshes, in the Isle of Skye and Mull, and near Glasgow. (Near Douglas Castle. Lightfoot. On the coast to the east of Dunbar. Mr. J. Mackay. Near Primrose Bridge, between Bootle and Crosby rabbit-warren, near Liverpool. Mr. Shepherd. Near Aberfraw and Bodowen, Anglesey. Rev. Hugh Davies. In marshes on the Wear, below Southwick, near Hartlepool. Rev. J. Dalton, in Winch Guide. E. P. July.

(RHYNCHOSPO'RA.* *Bloss.* none. *Spike* of few flowers.
Cal. tiled all round; with empty external scales. *Seed*
beaked with the permanent base of the style.

R. AL'BA. Heads abrupt: stamens two: leaves tapering: bristles at
the base of the seed numerous. Sm. E.)

Dicks. *H. S.*—(*E. Bot.* 985. E.)—*Gies.* 29—*Fl. Dan.* 320.—*H. Ox.* viii. 9. 39.
—*Pluk.* 34. 11—*Scheuch.* 11. 11—*Mich. Cyperella* 1.

Plant smooth and slender, six to twelve inches high. *Straw* triangular.
Spikes slender, white when fresh, changing to tawny. *Summits* two.
Seed with a flat beak one third its own length, and about ten bristles
from the receptacle rising above it.

WHITE BEAK-RUSH. *R. alba.* Vahl. Br. Eng. Fl. *Schænus albus.* Linn.
With. Willd. Hook. Fl. Brit. Turfy bogs and marshes. A bog near
Haydon, Norfolk. Woodward. Blakeley, near Manchester. Mr. Caley.
New Forest. (Amptill moor, &c. Bedfordshire. Abbot. Bullmarsh
heath, Berkshire. Mr. Rudg. Bot. Guide. Bogs west of Dolbadarn
Castle; and boggy fields between Plasnewydd in Rhyl and Rhyd marsh,
near Rhyddlan. Mr. Griffith. On Wareham, Camford, and Poole heaths.
Pulteney. On the heath at Preswick Carr, Northumberland; on Beam-
ish moor, Durham. Mr. Winch. E.) P. July—Sept.

(R. FUS'CA. Heads ovate-oblong: stamens three: leaves thread-shaped:
three bristles at the base of the seed. Sm. E.)

E. Bot. 1575—*Fl. Dan.* 1562—*H. Ox.* viii. 11. 40.

Much resembling *R. alba*, but smaller, and distinguished by the little
spikes being brown, growing in clusters, and not white and flat-topped.
Linn. (The plumpness of the *spikes* remarkable. *Leaves* nearly filiform,
channelled. *Stem* shorter than in the preceding.

BROWN BEAK-RUSH. *Schænus fuscus.* Linn. With. to Ed. 7. *S. albus*, β.
Fl. Brit. *R. alba*, β. Vahl. Br. *R. fusca.* Sm. Eng. Fl. E.) Turfy bogs,
rare. Brightstean moss, and other mosses about Kendal. Mr. Gough.
(On Cromlyn bog, near Swansea. Mr. E. Forster. Near Killarney. Mr.
Mackay. Originally gathered by the Rev. Mr. Lightfoot near the Isle
of Purbeck. Eng. Fl. E.) P. June.

CAREX.†. *Barr. Fl.* Catkin imbricated. *Cal.* of one scale.
Bloss. none. *Fert. Fl.* Catkin imbricated. *Cal.* of one
scale. *Bloss.* none. *Stigmas* two or three. *Seed* in-
vested with an inflated tunic. E.‡)

* (From *ρυγχος*, a beak, and *σπορα*, seed; the permanent base of the style forming
a beak to the seed. E.)

† (Possibly from *καρπα*, abscindo, in allusion to the sharp edges of the stems, and the
Virgilian character. Georg. 3. E.)

‡ The great confusion in which this difficult Genus has too long been involved so far
as regards the British species, is now removed by the industry and accuracy of the Rev.
Dr. Goodenough, Bp. of Carlisle, whose judicious dissertation published in *Linn. Tr.* v. ii.
has enabled me to present new specific characters, and more ample, in many instances
more accurate, descriptions, than could otherwise have been given; besides the removal
of many doubts and errors. The species being very numerous, their investigation will
be facilitated by giving the characters in immediate comparison. The annexed numbers
will direct the reader to the descriptions more at large, the references to figures, &c. It
is not only to Dr. Goodenough's paper, mentioned above, that we are indebted for the

SYNOPSIS OF THE SPECIES.

(1) *Spike single, not branched.*

1. *C. dioica*. Spike simple; edges of the capsule finely serrated; barren and fertile florets on different plants.
- (2. *C. Davalliana*. Spike simple, dioecious; fruit spear-shaped, triangular, ribbed, deflexed; its angles rough towards the summit. E.)
3. *C. pulcherrima*. Spike simple, with barren and fertile florets; fertile flowers uppermost; capsules diverging, reflexed, tapering at each end.
4. *C. pauciflora*. Spike simple, with barren and fertile florets; fertile florets about three, not closely set, expanding; barren florets generally terminal.

(2) *Spike compound; barren and fertile florets in each Spiket.*[*C. atrata*.]

5. *C. stellulata*. Spikets generally three or four, distant; capsules diverging, entire at the rim, acute.
6. *C. curta*. Spikets about six, egg-shaped, rather distant, naked: scales egg-shaped, rather acute, shorter than the capsule.
- (7. *C. elongata*. Spikets numerous, oblong, rather distant, naked; glumes ovate; tunic ovate, pointed, cloven, recurved, many-ribbed, longer than the glume. E. Bot. E.)
8. *C. ovalis*. Spikets about six, ovate, alternate, near together; scales spear-shaped, acute, as long as the capsule.
9. *C. remota*. Spikets axillary, solitary, distant, nearly sessile; floral leaf very long; capsules cloven at the end.*
10. *C. arillaris*. Spikets axillary, often three together, distant, sessile; floral leaf long; capsules cloven at the end.*
11. *C. incurva*. Spike conical, composed of many spikets crowded together; involucre none; straw curved.
12. *C. arenaria*. Spike leafy, oblong, rather acute; spikets many, the upper ones barren, the lower fertile; straw curved.

improved state of this Genus, but also to his private communications of specimens and observations, and to the trouble he has taken in looking over the references to figures, and pointing out such as he thought erroneous. (Sir J. E. Smith has since the publication of our fourth Edition extended this Genus by several new species, which will be here found incorporated under the general arrangement of the Rev. Dr. Goodenough, who has likewise suggested an improvement of the generic character of *Carex*, by calling the permanent husk that invests the seed an *arillus*, a name which Sir J. E. Smith observes, expresses its true nature much better than the hypothetical one of *nectarium*, the erroneous one of *capsula*, or even the analogical denomination of *corolla*. To the latter, however, it since appears, in a still more recent publication, has the learned President had recourse: so difficult is it even for the most scientific minds to assimilate their ideas of the mysterious analogies of nature. E.)

* (The Rev. Dr. Goodenough, has since added, "I believe all *Carexes* dispose of their seeds by the opening of the point of their capsule. This opening is observable in some very early, in others not till quite old. In the former, the capsule is described as opening; in the latter, because it is not seen but in very advanced age, as closed." Linn. Tr. 3. p. 77. E.)

13. *C. intermedia*. Spike oblong, blunt; spikets many, the upper and the lower ones fertile, the middle ones barren; straw upright.
14. *C. divisa*. Spike egg-shaped, somewhat doubly compound; floral-leaf upright; spikets rather crowded; capsuleds laid close; root creeping.
15. *C. muricata*. Spike oblong, somewhat doubly compound; spikets not crowded; capsules diverging, cloven at the end; root fibrous.
16. *C. divulsa*. Spike doubly compound, long, somewhat branched at the base; lower spikets distant, upper ones near together; capsules rather upright.
17. *C. vulpina*. Spike more than doubly compound, compact though branched, blunt; spikets barren at the top; capsules diverging; straws with very acute angles.
18. *C. paniculata*. Spike (or branched panicle) more than doubly compound, acute; branches alternate, rather distant; capsules expanding; straw triangular.
19. *C. teretiuscula*. Spike more than doubly compound, branched but compact, rather acute; spikets crowded; barren floret at the top; capsules expanding; straw nearly cylindrical.

(3) *Spikes, one barren, the others fertile; floral leaves membranous.*

20. *C. digitata*. Sheaths membranous, not leaf-like, inclosing half the fruit-stalk: spike strap-shaped, upright; barren spike shortest; capsules distant.
21. *C. clandestina*. Sheaths membranous, not leaf-like; fertile spikes distant, hardly higher than the sheath.

(4) *Spikes, one barren, the others fertile; floral leaves leaf-like, generally sheathing the fruit-stalk.*

22. *C. pendula*. Sheaths long, inclosing all the fruit-stalk; spikes cylindrical, very long, pendent; capsules much crowded, egg-shaped, acute.
23. *C. strigosa*. Sheaths long, inclosing all the fruit-stalk; spike thread-shaped, limber, deflexed; capsules oblong, somewhat triangular, acute.
24. *C. praecox*. Sheaths short, inclosing nearly all the fruit-stalk; spikes near together; barren spikes club-shaped; fertile, egg-shaped; capsules nearly globose, pubescent.
25. *C. filiformis*. Sheaths short, inclosing nearly all the fruit-stalk; barren spikes generally two, strap-shaped; fertile spikes egg-shaped, distant; capsules hairy.
26. *C. flava*. Sheaths short, inclosing nearly all the fruit-stalk: the upper leaf-like part diverging; barren spike strap-shaped; fertile spikes roundish; capsules beak-pointed.
- (27. *C. fulva*. Lower sheath inclosing but half the fruit-stalk, upper ones nearly the whole: fertile spikes two, oblong, acute; capsules beaked; straw scabrous. E.)
28. *C. extensa*. Sheaths very short, inclosing all the fruit-stalk; the upper leaf-like part somewhat reflexed; spikes crowded; fertile spikes nearly globular; capsules egg-shaped, acute.

29. *C. distans*. Lower sheath inclosing about half the fruit-stalk ; upper ones nearly the whole ; spikes oblong, very far asunder ; capsules acute.
30. *C. panicea*. Lower sheath inclosing about half the fruit-stalk ; upper ones nearly the whole ; spikes slender, upright, far asunder ; capsules inflated, bluntnish, rather distant.
31. *C. capillaris*. Sheaths inclosing half the fruit-stalk ; fertile spikes oblong, flaccid, pendent when ripe ; fruit-stalk hair-like ; capsules tapering to a point.
- (32. *C. Michxolferi*. Sheaths about half the length of the fruit-stalk ; fertile spikes distant, erect, lax ; capsule triangular, with a short beak bifid at the point. E.)
33. *C. depauperata*. Sheaths inclosing less than half the fruit-stalk ; fertile spikes distant, few-flowered ; capsules egg-shaped, inflated, beak-pointed.
34. *C. sylvatica*. Sheaths short ; spikes thread-shaped, flaccid, pendent ; capsules egg-shaped, ending in an awn-like beak.
35. *C. recurva*. Sheaths short ; fertile spikes nearly cylindrical, pendent ; capsules nearly globose, egg-shaped ; roots creeping.
36. *C. pullescens*. Sheaths extremely short ; fertile spikes rather cylindrical, pendent when in fruit ; capsules oblong, blunt.
37. *C. limosa*. Sheaths hardly any ; fertile spikes egg-shaped, pendent ; capsules egg-shaped, compressed ; roots creeping.
- (38. *C. variflora*. Sheaths very short, almost none ; fertile spikes very few-flowered, lax, pendulous ; capsule inversely egg-shaped, obscurely three-sided ; striated. E.)
39. *C. pseudo-cyperus*. Sheaths hardly any ; fertile spikes cylindrical, on fruit-stalks, pendent ; capsules awn-beaked, rather diverging.
- (40. *C. ustulata*. Sheaths elongated, shorter than the flower-stalks ; fertile spikes ovate, pendulous ; capsule elliptical, compressed, beaked, with rough edges. E.)
41. *C. atrata*. Sheaths hardly any ; all the spikes with barren and fertile florets ; upper spikes on fruit-stalks, when in fruit, pendent ; capsules egg-shaped, rather pointed.
- (42. *C. pulula*. Summits two ; sheaths none ; spikes egg-shaped, the lower one stalked ; fruit elliptical, inflated, with a short notched beak. E.)
43. *C. pilulifera*. Sheaths none ; barren spike slender, fertile somewhat globular, sessile, crowded ; straw feeble.
- (44. *C. tomentosa*. Sheaths extremely short ; fertile spikes nearly sessile, cylindrical, obtuse ; glumes elliptical, acute ; fruit downy. E.)
45. *C. rigida*. Summits two ; sheaths none ; spikes oblong, nearly sessile ; leaves rigid, bent.
46. *C. carpitosa*. Summits two ; sheaths none ; spikes nearly sessile, cylindrical, blunt ; leaves upright, soft.
47. *C. stricta*. Summits two ; sheaths none ; spikes nearly sessile, cylindrical, acute ; fertile spikes mostly two ; leaves upright, stiff, and straight.

(5) *Spikes, some barren, others fertile; barren spikes two or more.*

[*C. filiformis*, *stricta*, *recurva*, and some others, which have, though rarely, two barren spikes.]

48. *C. riparia*. Spikes oblong, acute; scales of the barren spear-shaped, of the fertile tapering to an awn-like point; capsules egg-spear-shaped, cloven into two teeth at the end.
- (49. *C. larvigata*. Spikes cylindrical; fertile ones on stalks; sheaths very long; glumes pointed; fruit triangular, with a cloven beak. E.)
50. *C. paludosa*. Spikes oblong, rather blunt; scales of the barren ones blunt, of the fertile spear-shaped; capsules egg-spear-shaped, slightly toothed at the end.
51. *C. acuta*. Summits two; spikes thread-shaped; fertile spikes pendulous whilst in flower, upright when ripe; capsules rather acute, entire at the end.
52. *C. vesicaria*. Barren spikes strap-shaped; fertile oblong, expanding; capsules inflated, oblong, beak-pointed, expanding.
53. *C. ampullacea*. Spikes thread-shaped, the barren ones thinnest, fertile ones cylindrical, upright; capsules inflated, globular, awn-beaked, diverging.
54. *C. hirta*. Hairy; all the spikes oblong; fertile spikes far asunder, sheathed; capsules hairy.

(1) *Spike single; not branched.**

1. *C. stricta*. Spikes simple: edges of the capsule finely serrated: barren and fertile florets on different plants.

(*E. Bot.* 543. E.)—*Fl. Dan.* 369—*H. Or.* viii. 12. 22. *Barren plant. ib.* 36, *fertile.*—*Mich.* 32. 1 and 2. *B. and F. plant*; but the latter erroneously represented with three summits instead of two.

Root creeping. *Leaves* like bristles, somewhat three-cornered; channelled on the inside, upright, smooth, nearly as tall as the fruit-stalk. *Straw* four to ten inches high, triangular, smooth. *Barren spike* half to one inch. *Fertile* shorter. *Capsules* expanding, egg-shaped, acute. *Summits* two. Goodenough. *Seeds* a little serrated. *Straw* at bottom light brown; but in *C. capitata* the seeds are entire, and the straw black at the bottom; so that should *C. capitata* prove to be a British plant, they may be thus distinguished. Afzel.

Var. 2. Barren and fertile florets on the same spike.

Gent. Mag. July, 1793.

C. capitata of Huds. not of Linn. Relh. Hinton and Teversham Moors, near Cambridge.

* (It may be here remarked, and *Carex* cited in exemplification, that, in order to secure fecundation in monoecious plants, the stamiferous or barren florets are generally placed by nature above the pistilliferous or fertile ones, so that the pollen may with greater certainty fall on the pistil, whose stigma is invariably prepared with a viscid moisture, necessary both to secure the adherence of the pollen, and to stimulate its particles to explode the subtle vapour to be imbibed by the stigma, without which the seeds would not be perfected. E.)

SMALL SEG, or SEDGE. UPRIGHT-FRUITED DIOECIOUS CAREX. Turf bogs, not very uncommon. Polam, near Darlington. Mr. Robson. Meadows, Marham, Norfolk. Mr. Crowe. Boggy meadows, near Bungay, Suffolk. Mr. Woodward. (In a bog at the upper end of Llyn Idwel. Mr. Griffith. Hinton Moor, Gamlingay Bogs, moor between Snailwell and Exning, Cambridgeshire. Dr. Manningham. Bog in Purbeck Isle. Pulteney. Near Aberdylais Waterfall. Dillwyn. Peat bogs on Bullington Green, under Headington Wick Copse, Oxfordshire. Sibthorpe. Amberly Wild Brooks, Sussex. Mr. Borrer. *Bot. Guide*. Bogs near Hilton Castle, on Beamish Moor, and Chester Common, Durham. Mr. Winch. Pentland Hills. Greiv. Edin. E.) P. June—July.

- (2. *C. DAVALLIA'NA*. Spikes simple, dioecious; fruit spear-shaped, triangular, ribbed, deflexed; its angles rough towards the summit. *Fl. Brit.*

E. Bot. 2123.

Root tufted, not creeping. *Stem* rough. *Spikes* much longer than in *C. dioica*, and the long, reflexed, strongly ~~ribbed~~ *seed-covers*, roughish only at the angles near the top, not serrated, are abundantly characteristic. *Sn.* A span to a foot high.

PRICKLY SEPARATE-HEADED CAREX. First ascertained to be British by Prof. J. Beattie, who found it in Mearnsire. By the side of Guillon Loch, near Edinburgh. Greville. But this author has some doubt whether the plant there found may not prove of the preceding species. Near Belfast. Mr. Templeton. E.) Lansdown, near Bath. Mr. Groult. P. June. E.)

3. *C. PULICARIS*. Spikes simple, with B. and F. florets; B. flowers uppermost: capsules diverging, reflexed, tapering at each end.

(*Hook. Fl. Lond.* 177—*E. Bot.* 1051. E.)—*Leers*, 14. 1—*H. Or.* viii. 12. 21—*Mich.* 33. 1—*Pluk.* 34. 10—*Fl. Dan.* 166.*

Straw cylindrical, flattish on one side. *Barren flowers* falling off when out of blossom. *Capsules* pointed, when reflexed give the straw the appearance of a different plant, bearing no small resemblance to a harpoon. Linn. *Root* fibrous; this circumstance at all times distinguishes it from *C. dioica*, which has a creeping root. *Straw* smooth, three to twelve inches high. *Spike* terminal, cylindrical. *Summits* two. Gooden. *Leaves* bristle-shaped, bright green, in tufts, half as long as the straw. *Spikes*, the barren part slender, closely tiled. *B. flowers*: *scale* somewhat oval. *F. flowers*: *scales* broad at the base, embracing the germen, tapering to a point. *Capsules* longer than the scales, at first pressed to, afterwards expanding, finally reflexed, in which state shining brown, spear-shaped both ways, at a little distance much resembling a flea. Woodw.

FLEA SEG. (Welsh: *Chwain Hesgen*. E.) Turfy and muddy bogs. Sides of Ingleborough and other mountainous situations. Curtis. Boggy meadows, Norfolk, and near Bungay, Suffolk. Woodward. Malvern

* Scheuchz. 11. 9. 10. has been referred to this species, and by Linnæus to his *C. dioica*, but Dr. Goodenough informs me Scheuchzer's plant is not a native of Britain; observing, that it is more like *C. pulicaris* than *dioica*, but distinct from both; from *dioica* by the divaricated capsule; from *pulicaris* by the capsule being divaricated, not reflexed, and by being egg-shaped at the base, and not tapering from the middle to each end; (and Smith suspects *Fl. Dan.* 166, to be the barren plant of *C. dioica*. E.)

Chase. Mr. Ballard. Polam, near Darlington. Mr. Robson. Charley Forest. Pulteney. On St. Vincent's Rocks, Bristol, with *Ophrys apifera*. (Feckenham Bog, Worcestershire. Purton. In Anglesey. Welsh Bot. E.) P. June.

4. C. PAUCIFLORA. Spike simple, with B. and F. florets: F. florets about three, not closely set, expanding: B. floret generally one, terminal.

Dicks. H. S.—(E. Bot. 2041. E.)—Lightf. 6. 2. at p. 77.

Root branched. Straw (three to five inches high), upright triangular, leafy, striated. Root-leaves few, ensiform, pointed, naked; stem-leaves two, shorter than the straw. Spike terminal, upright. Barren flowers two or three, brown; fertile flowers three or five, greenish. Huds. (Summits three, occasionally two. Lightf. Readily known from the last by the very pale yellowish colour of the fruit. Hook. E.)

FEW-FLOWERED SEG. C. patula. Huds. 402 and 657. St. Bogs and mountainous heaths. Boggy soil halfway up Goatfield mountain, in the Isle of Arran; near a place where peat is dug in the ascent to Brodwick Castle. Lightfoot. (On peat bogs, Northumberland, between Twice-brewed-ale and Crag Lake, near the Roman-wall, at 500 feet above the level of the sea; the only English station yet ascertained. Mr. Winch. Middle of Ben Lomond. Dr. Walker in Hook. Scot. E.) P. June.

(2) Spike compound: both barren and fertile florets in each spikel.

[C. atrata.]

5. C. STELLULATA. Spikets generally three (or four), distant; capsules diverging; entire at the rim; acute.

(E. Bot. 806. E.)—Leers, 14. 8—Fl. Dan. 284—H. Ox. viii. 12. 26—Scheuch. 11. 3—Mich. 33. at the bottom, the right hand small figure.

(A span to a foot high. E.) Root fibrous. Leaves very slender, the edges and the keel a little rough, particularly upwards. Straw triangular, whilst flowering three inches high, afterwards much longer, and taller than the leaves. Capsules only slightly or not at all cloven at the end. Summits two. Gooden. Spikets seldom more than four, the spaces between them about equal to their length. Woodw. Distinguished from C. muricata by having the point of the capsule acute, and not very evidently cloven. Hal.

(Mr. Dawson Turner states, in Bot. Guide, that he found in the meadows opposite the inn at Beddgelert, a curious variety of this plant with a small barren spike at the top of the androgynous ones. That gentleman had also received a similar specimen from Germany. E.)

(LITTLE PRICKLY CAREX. C. muricata. Lightf. Welsh: Hysgen scruidd. E.) Sides of wet ditches and marshy places; in many counties.

P. May—June.

6. C. CURTA. Spikets about six, egg-shaped, rather distant, naked; scales egg-shaped, rather acute, shorter than the capsule.

(E. Bot. 1386. E.)—Leers, 14. 7—Mich. 33. 18—Fl. Dan. 285—Pluk. 34. 4.

* The fig. of Micheli is very large and coarse. Loesel. Pruss. p. 117. t. 32. is one of the best figures extant. In Plukenet's the *spicule* are wrongly placed on one side. Gooden.

Root somewhat creeping. *Leaves* slender, upright, pale bluish green, rough along the edges and the keel. *Straw* twelve inches or more, rather taller than the leaves, triangular, corners acute, roughish. *Spikets* six or more, egg-shaped, sessile, alternate. *Scales* thin, membranous, tender. *Capsule* rim entire. *Summits* two. Gooden. *Spikes* of a whitish green. Haller. *Spikets* oblong-egg-shaped. (Distinguished by its pale, elliptical *spikes*, and imbricating *capsules*. Hook. E.)

WHITE SEG. (Welsh: *Hesgen henwen*. E.) *C. canescens*. Lightf. *C. brizoides*. Huds. *C. cinerea*. With. ed. 2. Marshy places. Terrington Car, near Castle Howard, Yorkshire. Mr. Teesdale. (Llyn Idwell, Carnarvonshire. Mr. Griffith. At the foot of Lochain y Gair, near Invercauld, and on Ben Lawers. Mr. Brown. Near Edmond-Byers and Crook Oak, Durham. Mr. Winch. In a turbary between the parsonage at Llandyfyrdog and Trewyn, Anglesey. Welsh Bot. E.)
P. June.

- (7. *C. ELONGATA*. *Spikets* numerous, oblong, rather distant, naked; glumes egg-shaped: tunic egg-shaped, pointed, cloven, recurved, many-ribbed, longer than the glumes. E. Bot.

E. Bot. 1920—Scheuch. Agr. 487. t. 11. f. 4.

Root tufted. *Stems* above a foot high, triangular, rough-edged, as are also the *leaves*. *Spikets* from seven to fourteen, oblong, alternate, the upper ones crowded. *Glumes* acute, glossy, brown, with a green rib and pale edge, shorter than the fruit, which is copious, green, egg-shaped or elliptical, pointed, cloven, strongly ribbed, at length somewhat recurved. *Stigmas* two. *Burden flowers* inferior, few. E. Bot.

ELONGATED CAREX. Discovered by Mr. Jonathan Salt, in a marshy place at Aldwark, near the river Don, below Sheffield. P. June. E.)

8. *C. OVALIS*. *Spikets* about six, oval, alternate, near together: scales spear-shaped, acute, as long as the capsule.

(Fl. Dan. 1115.—E. Bot. 306. E.)—H. Ox. viii. 12. 29, and a separate spike at the bottom—Leers, 14. 6—Scheuch. 10. 15.

Root fibrous. *Leaves* deep green, rough on the edges and the keel. *Straw* triangular, a foot high; angles acute, rather rough. *Capsules* the rim entire. *Summits* two. *B. florets* at the base of the spikes; few. *F. florets* numerous, terminal. Gooden. *Floral-leaves*, frequently one at the base of the lowermost spiket, nearly as long as the spiket, soon falling off; the others similar to the scales, only broader and longer. *Scales* oval spear-shaped, shining, yellowish brown, with a green keel, membranous at the edge, the upper in each spiket longer and more pointed. Woodw. *Straw* eight to sixteen inches high, hollow.

OVAL-SPIKED SEG. (Welsh: *Hesgen hir-gylchudd*. E.) *C. leporina*. Huds. Marshes and watery places. P. June.

(*C. tenella*, Schk. (*C. straminea*, Don. Cant.) thus described in Eng. Fl., "Spikelets three, bracteate, distant, minute, of about three florets: fruit elliptical, convex at each side, very smooth and even, with a blunt entire beak: stamens two:" is said to have been found by Mr. G. Don in a wood by the river Esk, Angus-shire. Sm. E.)

9. *C. REMOTA*. *Spikets* axillary, solitary, distant, nearly sessile: floral-leaf very long: capsules undivided at the end. (This latter characteristic, Goodenough finds not invariable. E.)

(*E. Bot.* 832. *E.*)—*H. Or.* viii. 12. 17—*Leers*, 15. 1—*Fl. Dan.* 370—*Mich.* 33. 15 and 16—*Pluk.* 34. 3.

Spikes very small, the lower often on short fruit-stalks. *Linn.* A very elegant plant. *Stems* several together, one to two feet high, slender, weak, triangular, leafy below, above the lowermost floral-leaf rough, below smooth. *Leaves* numerous, slender. *Spikes* five to eight, sessile, spear-shaped, the three or four lowermost in the bosom of floral leaves, the upper naked. *Floral-leaves*, the lowermost longer than the stem, the two or three next above gradually shorter. *Scales* spear-shaped, when young with a green keel, and silvery membranous edges; when the seeds are ripe, yellowish. *Style* divided about the point of the capsule into two summits. *Capsule* longer than the scales. *Woodw.* *Leaves* edged with exceedingly fine teeth.

REMOTE SEG. (DISTANT-FLOWERED CAREX. Welsh: *Hesgen anghysfugos.* *E.*) Moist woods and sides of wet ditches. *P. May*—June.

10. *C. AXILLARIS*. *Spikes* axillary, often three together, distant, sessile: floral-leaf long: capsules cloven at the end. (This latter distinction, Goodenough declares not constant. *E.*)

Linn. Tr. ii. 19. 1—*E. Bot.* 993.

Neither this nor the preceding species can well be mistaken, and though in many circumstances they agree one with the other, the following observations are abundantly sufficient to distinguish them. In *C. axillaris* the straw is strong and rigid; in *C. remota* soft and feeble. *C. axillaris* has three to five spikets growing together; *C. remota* has never more than one at the base of each leaf. *Capsules* in *C. remota* entire; in *axillaris* cloven.

(AXILLARY CLUSTERED CAREX. *E.*) About wet ditch banks. Found by Mr. Curtis, near Putney. (Since by Mr. Woodward, at Earsham, Norfolk. Hall wood, Wood-Ditton, Cambridgeshire. Relhan. Side of a ditch near Ugly Green, and near Rickling Green, Essex. Mr. E. Forster, jun. Edges of ponds near Rippon. Mr. Brunton. Sides of ditches at Beverley. Col. Mackell. Bot. Guide. Near Copgrave, Yorkshire. Mr. Winch. Banks of the Esk, above Melville Castle. Dr. Graham, in Grev. Edin. *E.*) May—June.

11. *C. INCURVA*. Spike conical, composed of many sessile spikets crowded together: involucre none: straw curved.

(*E. Bot.* 927. *E.*)—*Lightf.* 24—*Alton.* 92. 4—*Fl. Dan.* 432.

Root creeping. *Stalk* three or four inches high, obscurely triangular. *Leaves* smooth; channelled, about the length of the straw. *Spike*, the *B. flower*, at the top, the *F.* at the base. *Summits* two. *Lightf.* Its conic and compact spike sufficiently distinguishes it from *C. arenaria*. Gooden. From the description of different authors it appears that the curvature of the straw is no necessary part of its character, though Lightfoot had supposed it to be so, and Dr. Goodenough tells me that in all the specimens he had seen, it had a curved straw. (Smith agrees with us that *C. juncifolia* of Allion is the same with this species; but, growing in alpine bogs, not exposed to driving sands or torrents, the stem is less frequently curved. *E.*)

(CURVED CAREX. *E.*) Deep loose sea sand at the mouth of the water of Naver, and near Skellerry, in Dunrosness, Shetland. Hope, in *Fl. Scot.*

(More recently Professor Beattie has found it near Aberdeen. E. Bot., and Mr. Maughan on the Links of St. Andrew's. Hook. Scot. E.)

P. July—Aug.

12. *C. ARENARIA*. Spike leafy, oblong, rather acute: spikets numerous, the upper ones barren, the lower fertile: straw curved.

Dicks. H. S.—(E. Bot. 928. E.)—*Mich* 33. 3 and 4—*Pluk.* 34. 8—*These figures are drawn unnaturally upright.*—*Pl. XX. B. in seed.*

(Eight inches to a foot high. E.) *Root* the size of a packthread creeping in the dry sand to a great length: knots about three-fourths of an inch apart, not every one throwing out leaves or fibres. *Leaves* somewhat rolled in at the edge, in tufts arising from a brown, dry, withered sheath. *Spike* one to two inches long, generally bent. *Spikets* four to ten, oval-spear-shaped, the upper crowded and without floral-leaves. *Floral-leaves*, the lowermost generally shorter than the spike, the next above, and sometimes the two next also, as long as the spikets. *Scales* oval-spear-shaped, pointed, yellowish brown with a green keel. *Capsules* spear-shaped, shorter than the scales, convex on the upper, flat on the lower side, slightly cloven at the end. *Style* divided as it issues from the capsule. *Summits* bent back. *Woodw.* *Capsules* bordered towards the top, two on each side, with a membranous edge. *Gooden.*

SEA-SIDE SEG. Welsh: *Hesgen arfor*, *Hesgen y tywod*. E.) In loose moveable sand on the sea shore. Sea beach at Yarmouth and Lowestoft. Mr. Woodward. Beach near Prestatyn, Flintshire, and Conway Marsh, Carnarvonshire. Mr. Griffith. (Anglesey. Welsh Bot. Between Caroline Park and Granthor, plentiful. *Grev. Edin. E.*)

P. June—July.*

Var. 2. Straw and spikes upright; Root fibrous. *Pl. XX. A. the upright variety.* B. a straw of the common sort in seed, to show the curvature. a, a, a, views of the capsule to show its membranous border. About five inches high, stiff, upright. *Root* fibrous, not creeping. *Straw* triangular, naked, but sheathed at the base by the leaves for about an inch from the root. *Leaves* sheathing, slender, and channelled upwards, solid, and three-sided at the end, finely serrated at the edges and angles, nearly as tall as the straw. *Partial Involucrum* half embracing the spike-stalk, broad and leaf-like at the base, slender and pointed upwards. *Spike* two-rowed, one to two and a half inch long, more than half an inch broad; spear-shaped. *Spikets* sessile, many-flowered (fourteen or more), egg-shaped, upper spikets mostly barren, the others mostly fertile. *Scales* spear-shaped, skinny, yellow, with a green mid-rib, ending in an awn. *Capsules* compressed, concave above, convex underneath, cloven at the end, edged with a membranous border. *Summits* two.

(**UPRIGHT SEA-SIDE SEG.** *C. Witheringii*. Gray's Nat. Arrang. E.) Sandy shores on the N. E. side of the Isle of Wight. South and north shores, Liverpool. Dr. Bostock. E.)

R. April—May.

13. *C. INTERMEDIA*. Spike oblong, blunt: spikets numerous; the upper and lower ones fertile, the middle ones barren: straw upright.

* (The root (fresh) is sudorific and diuretic; may be used as sarsaparilla, in diseases of the skin, and syphilis. Gleditsch; whose favourable testimony is corroborated by that of Professor Sumacher of Copenhagen. This plant is generally found where it is of great service in fixing loose sands. E.)



Carex. arenaria (*C. Wütheringii* of Gr.)

W.W. del.

(*E. Bot.* 2042. E.)—*Leers*, 14. 2—(*H. Ox.* viii. 12, 32. *Gooden.*)

Root thread-shaped, jointed, creeping deep under the surface, joints distant, fibrous, set with bristle-like fringe. *Straws* above a foot high, somewhat leafy, naked upwards, rough. *Leaves* as long as the straw. *Spike* upright, at length pendulous. *Spikets* twenty or thirty, sessile, oblong, taper-pointed, yellowish rust-coloured, the lower more distant, alternate, the two lowermost and the terminal one with all the florets fertile, when ripe egg-shaped and thicker; two or three in the middle with fertile flowers and some barren ones at the end, the upper fifteen to twenty, crowded, with only barren flowers. *Floral-leaves*, one at the base of each spiket, spear-shaped, taper-pointed, the two or three lowermost egg-shaped, sometimes terminating in a bristle-shaped leaf just longer than the spiket. *Scales* of the barren flowers spear-shaped, of the fertile flowers egg-shaped. *Nectary* rough at the edges. *Capsules* egg-shaped, taper-pointed, with sharp edges cloven at the end. *Leers*. Resembles *C. ovalis* in habit. *Straw* usually taller, three-square, angles more acute. *Spike* longer. *Spikets* more numerous, smaller, more spear-shaped, sometimes found proliferous; the upper much crowded. *Floral-leaf* usually longer than the spike, not always present, and in its place broad oval spear-shaped scales, of a deeper brown than those of *C. ovalis*. *Style* divided to the base, whereas in *C. ovalis*, only about one fourth of its length. *Woodw.* *Straw* triangular, angles acute, rough. *Summits* two. *Spikets* seldom altogether barren or fertile, the former admitting a few pistilliferous, and the latter a few stamiferous florets. Nearly allied to *C. arenaria*, but besides the differences mentioned in the specific characters, and the situation of the roots, in *C. intermedia* the capsule has its margin entire, whilst in *C. arenaria*, it is bordered towards the top with a broadish membrane. *Gooden.*

SOFT BROWN CAREX. **SOFT SEG.** (Welsh: *Hesgen tygliw benlydd*. E.) *C. disticha*. Huds. (*C. arenaria*. *Leers*. E.) Moist meadows and marshes. Near Bungay, frequent. Mr. Woodward. Boggy meadows on the side of Malvern Chase. Mr. Ballard. (In a meadow at Blynhill, Salop. Rev. S. Dickenson. The Park near Liverpool. Dr. Bostock. In a thicket by the road from Abbot's Moreton to Dunnigton, Warwickshire. Purton. In Anglesey. Welsh Bot. Braid and Pentland Hills. Grev. Edin. E.) P. May—June.

14. *C. divisa*. *Spike* egg-shaped, somewhat doubly compound: floral-leaf upright: spikets rather crowded: capsules laid close: root creeping.

Linn. Tr. ii. 19. 2—*E. Bot.* 1096—(*Barr.* 144. 2, but the leaves should have been upright and straight—*Park*, 1267. 11, the root well expressed. *Gooden.*)

Root thick. *Spikets* egg-shaped, almost in contact, upright, terminal florets barren. *Scales* longer than the capsules. *Capsules* pressed close to the straw, a little bordered towards the end. *Gooden.* *Leaves* narrow, frequently longer than the straw. *Straw* one and a half to two feet high, triangular. *Spikets* five or six, the lower rather distant, the upper crowded and expanding. *Floral-leaf* often considerably longer than the spike, and growing in a line with the stem, gives the plant the appearance of a rush. *Scales* oval spear-shaped, shrivelling and falling off as the spike ripens. *Style* longer than the capsule, divided one third of the way into two summits, reflexed. *Capsules* whitish, oval, pointed at both ends, very obscurely triangular, or rather convex on one side, and flat on the inner. *Woodw.*

BRACTEATED MARSH SEG. (*C. divisa*. Huds. E.) Salt marshes. Meadows near Hithe and Colchester. *R. Syn.* Near Oakley Bridge, between Norwich

and Yarmouth. Mr. Crowe. Cley, Norfolk; next the sea. Mr. Woodward. (Kennington, near London. Mr. Groult. E. Bot. Abundant in the marshes between Greenhithe and Dartford. Mr. J. Woods, jun. Bot. Guide. Ham Ponds, near Dover, and Sandwich marshes. Dillwyn. Meadow called Derricots, near Hull. Teesdale. ditto. Near Copgrove, Yorkshire. Mr. Winch. Marsh near Montrose. Mr. G. Don. Hook. Scot. E.) P. June.

15. *C. MURICATA*. Spike oblong, somewhat doubly compound: spikets not crowded: capsules diverging, cloven at the end: root fibrous.

(*E. Bot.* 1097. E.)—*Mich.* 33. 14; and *R.* between 19 and 15—*H. Oz.* viii. 12. 27—*Barr.* 20. 3—(*Also Lob. Ic.* i. 19. 2—*Ger. Em.* 21. 6, and *Park.* 1267. 8. Gooden.)

Straw three-sided, angles acute, rough. *Spike* compound, often doubly so. *Spikets* about ten, the lower ones distant, upper ones near together, egg-shaped, sessile, barren florets at the top. *Scales* shorter than the capsule, which is cloven at the end, and rather diverging. *Summits* two. This species differs from *C. vulpina* by its spike never being more than doubly compound, and by the straw not being enlarged under the spike: from *C. divisa* by its fibrous root, its diverging capsules, and its want of an upright floral leaf: from *C. stellulata* by its numerous and contiguous spikets, and its capsules being cloven at the end. Gooden. *Straw* with or without a floral leaf. Huds. Six to fourteen inches high. *Spike* scarcely one inch long.

- Var. 2. More slender, spike less compound. *Straw* less rough, and at the bottom nearly cylindrical.

Barr. 10—*Mich.* 33. f. *R*—*Scheuch.* 11. 5. Gooden.

(Rev. Hugh Davies, who gathered this plant in the Old Park near Beaumaris, and observed it to be constantly uniform in its mode of growth and appearance, is inclined to consider it a distinct species. E.)

(GREATER PRICKLY SEG. E.) SPIKED SEG. *C. spicata*. Huds. Lightf. &c. not of Linn. Watery places: banks of rivers, woods. P. May—June.

16. *C. DIVULSA*. Spike doubly compound, long, somewhat branched at the base: lower spikets distant, upper ones near together: capsules rather upright.

(*E. Bot.* 269. E.)—*Barr.* 20. 2—*Mich.* 33. 10 and 11.

Root fibrous. *Straw* three-sided, angles acute, rather rough. *Spike* interrupted. *Spikets* numerous, egg-shaped, barren florets at the top: floral-leaves, bristle-like, rough. *Scales* longer than the capsules, with an awn at the end. *Capsules* cloven at the end. *Style* short. *Summits* two. The *Capsules* being not quite upright, but yet not diverging, distinguishes this from starved specimens of *C. vulpina*, as figured by Leers, 14. 3. Gooden.

GREY SEG. *C. canescens*. Huds.: not of Linn. Leers, or Lightf. St. (*C. muricata* β. Hook. who thus, with Wahlberg, considers it only a var. to be distinguished chiefly by its elongated spike with distant spikelets. E.) Moist shady places. Common in woods and hedges in Norfolk and Suffolk. Mr. Woodward. King's Park, Edinburgh: and fields near Brockham, Surry. Mr. Winch. E.) P. May—July.

17. *C. VULPINA*. Spike more than doubly compound, compact though branched, blunt: spikets barren at the top: capsules diverging: straws with very acute angles:

Var. 1. Spike doubly compound, floral leaves awned. St.

(*E. Bot.* 307. E.)—*Leers*, 14. 5—*H. Ox.* viii. 12. 24—*Mich.* 33. 18.

Var. 2. Spike compact, floral leaves awned. St.

Mont. F. H. Scirpoides—*Lob. Ic.* 19. 1—*Ger. Em.* 21. 5—*Park.* 1266. 7—*Ger.* 19. 5—*C. B. Th.* 87—*J. B.* ii. 497. 1.

Var. 3. Spike less compact; floral leaves acuminate. St.

Leers 14. 3—*Fl. Dan.* 308.

Root fibrous. *Straw* thickest at the spike, not so tall as the leaves. *Spike*, a floral leaf at the base of each branch. *Scales* rather longer than the capsules. *Gooden.* *Straw* thick, firm. *Spike* thick, rough on all sides. *Leaves*, the sheaths terminated by a pointed tongue, as in the grasses. *Linn.* *Leaves* bright green, set with minute teeth pointing upwards, in a thick tuft. *Stems* two feet high, triquetrous, the sides somewhat concave, the angles sharp, and near the spike set with minute teeth pointing upwards. *Spike*, or rather *panicle*, short and close. *Spikets* short, numerous, the upper without floral-leaves, or with a scale broader than the rest at the base. *Floral-leaves* sometimes wanting, that at the base of the lowermost spiket stiff, triangular, awl-shaped, half embracing the stem at the base, membranous at the edge, the upper part green, set with minute sharp teeth, the whole turning brown as the spike ripens; those at the base of several of the lower spikets similar but smaller. *Scales* of the same colour, egg-shaped, broad at the base, tapering into an awn. *Barren flowers* in the upper part, and *fertile flowers* in the lower part of each spiket. *Summits* two; deeply divided. *Capsules* obscurely triangular, cloven at the end. *Woodw.*

GREAT SEG. (Welsh: *Hesgen dywysenog ffurjaf.* E.) Marshes and banks of rivers, common. P. May—June.

18. *C. PANICULATA.* Spike (or branched panicle) more than doubly compound, acute: branches alternate, rather distant: capsules expanding: straw triangular.

(*E. Bot.* 1064—*Fl. Dan.* 1116. E.)—*Scheuch. Pr.* 8. 2—*Leers* 14. 4—*H. Ox.* viii. 12. 23—*Mich.* 33. 7.

Root fibrous, many male florets in the upper spikets, about four in the lower ones. *Gooden.* *Stems* numerous, one to four feet high, naked above, triquetrous, minutely serrated at the edge. *Root-leaves* in a thick tuft, sometimes taller than the stems, terminating in a stiff thorn-like point; minutely serrated and cutting at the edge. *Bunch* two or three inches long, branched below, usually terminating above in a simple spike; branches one half to one inch long, with numerous small roundish spikets, closely crowded. *Floral-leaves* awl-shaped, short, usually one at the base of the lowermost branch, and sometimes to one or two of those above. *Scales* egg-shaped, blunt at the end, deep brown, closely embracing the capsules. *Summits* two. *Capsules* longer than the scales, obtusely triangular, tapering to a sharp cloven point. *Woodw.*

GREAT PANICLED SEG. (Welsh: *Hesgen rafunog ffurjaf.* E.) Bogs and watery places. P. June.

Var. 2. Bunch simple: branches distant.

Spikets, the lower distant, the upper crowded. The colour of the scales, capsules, foliage, and stem, prove it to belong to *C. paniculata*. *Woodw.* Cultivated in a rich wet soil, the bunch became as much branched as in the preceding. *Gooden.*

19. *C. TERETIUSCULA*. Spike more than doubly compound, branched, but compact, rather acute: spikets crowded, B. florets at the top: capsules expanding: straw sub-cylindrical.

Linn. Tr. ii. 19. 3—(E. Bot. 1065. E.)

Root fibrous, (never forming tufts as in the preceding, but throwing up the culms as it were separately. Grev. E.) Straw when in flower but one-third the length of the leaves: in seed twelve or eighteen inches high; triangular, angles rough, acute, but the sides have a longitudinal projection which gives the whole a cylindrical appearance. Leaves rigid, sheathing nearly half the straw, rough on the keel and at the edges. Spike egg-oblong, rather pointed. Floral-leaf, the lower one very short, terminating in an awn; shorter than the spiket. Spikets and their spicula egg-shaped, pointed, sessile. B. florets uppermost, numerous. F. about six. Capsules rough at the edges, expanding; when ripe, longer than the scales. Summits two. Gooden; who observes that it approaches *C. paniculata*, but is only half the size of that in all its parts. (Hooker and Wahlberg deny specific distinction to this plant. Greville considers the character of the stem, and what he terms "the extreme difference in habit when growing, and the peculiarity of the one forming immense tufts, and the other being scattered and straggling," sufficient to keep them apart. E.)

LESSER PANICLED SEG. (*C. paniculata* β. Hook. Welsh: *Hesgen rafunog leiaf*; E.) Marshes near Norwich, discovered by Mr. Crowe. At Fulbourne. Rev. R. Relhan. (Bogs at Llansadwrn and Llandeg-fan, Anglesey. Rev. H. Davies. Marshes at Caister and Mautby, near Yarmouth, and Bradwell Common, Suffolk. Mr. Wigg. Arram Car, near Beverley. Mr. Teesdale. Bogs near Rippon. Mr. Brunton. Ditto. Pentland Hills. Grev. Edin. E.) P. May.

(3) Spikes, one barren, the others fertile: floral leaves membranous.

20. *C. DIGITATA*. Sheaths membranous, not leaf-like, inclosing half the fruit-stalk: spike strap-shaped, upright, barren spike shortest: capsules distant.

(E. Bot. 615. E.)—Leers, 16. 4—Mich. 32. 9—Scheuch. 10. 14—C. B. Pr. 9. 2; Th. 48.

Root fibrous. Leaves longer than the straw when in flower, rough at the edge, quite smooth on the keel. Fertile spikes of about seven florets. Capsules pubescent, not cloven. Summits three. Gooden. Leaves in a thick tuft. Stems obscurely triangular, slender, not rough, one half to one foot high, entirely naked, except some reddish brown leafy sheaths at the base. Barren spike half an inch long, closely tiled, from the same sheath with the uppermost fertile spike, and being shorter, over-topped by it. Scales numerous, yellowish brown, membranous and shining at the ends, and so bluntly rounded as to seem lopped. Fertile spikes three or four, alternate, distant, about an inch long, on fruit-stalks. Florets alternate, distinct. Scales like those of the barren spikes, as long as the capsules. Capsules obscurely triangular, tapering to a blunt point. Style divided half way down into three summits. Woodw.

FINGERED SEG. Woods and shady places. Near Bath. Mr. Sole. St. Vincent's rocks, Bristol, on the south side of the Avon. Mr. W. Clayfield. Mackershaw Wood, Yorkshire. Mr. Brunton. Bot. Guide. Thorp-arch Wood. Sir T. Frankland. Friary Wood, Hinton Abbey, Somersetshire. do. E.) P. May—June.

21. *C. CLANDESTINA*. Sheaths membranous, not leaf-like; fertile spikes distant, scarcely higher than the sheath.

(*E. Bot.* 2124. E.)—*Scheuch.* 10. 1—*Mich.* 32. 8.

Root fibrous. *Leaves* slender, more than thrice the length of the straw, channelled, rough on the keel and the edge towards the points. *Straw* subcylindrical, flattened on one side, smooth. *Spikes*, one barren, three fertile, all distant. *B. spike* terminal, acute, oblong, half an inch long. *F. spike* oblong, few flowered, on fruit-stalks. *Sheaths* to each spike often involving part of the spike as well as the fruit-stalk. *Capsules* entire at the end. *Summits* three, long. Gooden.

DWARF-SILVERY CAREX. St. Vincent's rocks, Bristol, just below the Hotwells. Mr. Sole. P. April.

- (4). *Spikes*, one barren, the others fertile. *Floral-leaves* leaf-like, generally sheathing the fruit-stalks.

22. *C. PEN'DULA*. Sheaths long, inclosing all the fruit-stalks; spikes cylindrical, very long, pendent: capsules much crowded, egg-shaped, acute.

Curt. 180—(*F. Bot.* 2315. E.)—*Barr.* 45—*H. Ox.* viii. 12. 4.

Root fibrous. *Plant* from two to six feet high. *B. spike* terminal, two to four inches long. *F. spikes* on fruit-stalks, four to six inches long, pendent. *Summits* three. Gooden. The noble stature of the plant, and the very long and pendulous spikes, render further description unnecessary.

GREAT PENDULOUS SEG. Moist woods and hedges, rare. Between Hampstead and Highgate, and between Marybone and Kilburn. Near Woodbridge, Suffolk. Mr. Woodward. Witchery Hole, near Ham Castle, Worcestershire. Wood between Buildwas Inn and the Birches, Shropshire. Stokes. By the Tees, near Croft. Mr. Robson. Banks of the Esk, above Melville Castle. Dr. Graham in Grev. Edin. (Oversley Wood, and Spernal Park, Warwickshire. Purton. In woods near Annesley, and Beauvale Abbey, Notts. By the side of the lane between Stockwood and Keynsham, Somersetshire. E.) P. May—June.

23. *C. STRIGOSA*. Sheaths long, inclosing all the fruit-stalk: spike thread-shaped, flaccid, turning downward: capsules oblong, somewhat triangular, acute.

Linn. Tr. ii. 20. 4—(*E. Bot.* 994. E.)

Root fibrous. *Straw* two feet high, or more, taller than the leaves, three-cornered, angles acute, smooth. *Leaves* broad, rough at the edge and on the keel. *Barren spike* two inches long, cylindrical, slender, straight, terminating. *Fertile spikes* about seven, very slender, distant, on fruit-stalks; at first upright, then hanging down; the upper ones often having a few male florets at the end. All the spikes sheathed at the base, sheath longer than the fruit-stalks. *Capsules* entire at the rim, when full grown near twice as long as the scales. *Summits* three. Gooden. *Flowers* thin, irregularly scattered. *Scales* membranous, pale brown, with a green keel. *Capsules* three-cornered, brownish green, ribbed, tapering regularly to a point at each end, but not taper-pointed as in *C. sylvatica*. Wood. Differs from *C. sylvatica* in its fruit-stalks being hardly longer than the sheaths, and its capsules being triangular and acute, but not with a long taper point. Gooden.

LOOSE PENDULOUS SEG. SLENDER-EARED BROAD-LEAVED CYPERUS-GRASS, with many spikes. R. Syn. Woods and hedges. In a lane near Black Notley, Essex. Woods near Oxford. Mr. Newberry. Lanewood and Shortwood, Pucklechurch, Gloucestershire. Mr. Swayne. In a wood at Hedenham, Norfolk. Mr. Woodward. (Old Hut woods, near Liverpool. Dr. Bostock. Arniston Woods. Grev. Edin. E.) P. April—May.

24. *C. PRÆCOX*. Sheaths short, inclosing nearly all the fruit-stalk ; spikes near together : barren spike club-shaped : fertile egg-shaped : capsules roundish, pubescent.

Dicks. h. s.—(*Hook. Fl. Lond. E.*)—*Jacq. Austr.* 446—(*E. Bot.* 1099. E.) *Lob. Ic.* i. 10 ; the upper figure on the right hand with three spikes—*Ger. Em.* 22. 8. the upper figure.—*Park.* 1160. 8—(the lower figure is a single-spiked variety, which I have found occurring now and then. Gooden.)

Root creeping. Straw six to twelve inches high, leafless, triangular, angles smooth. Leaves shorter than the straw, wide-spreading, somewhat channelled, strap-shaped, pointed, rough on the keel and at the edges. Spikes one barren, from one to three fertile, but mostly two ; near the top of the straw and not far asunder. Scales membranous, rush-coloured, about as long as the capsules. Fruit-stalk of the fertile spikes short, encompassed by a sheathing leaf of the same length, which hardly ever exceeds the height of the straw. Capsules cottony, egg-shaped, rather triangular, mouth undivided. Summits three. *Jacq.* Gooden. Easily distinguishable from *C. pilulifera* and *saxatilis* of Huds., by its spikes having short peduncles encompassed by a sheath of the same length, Huds. plants having no sheath. Gooden. The smaller specimens with stiff recurved leaves, have much the appearance of *C. rigida*, but in that the straw is rough, the flower scales black, the capsules smooth, the summits only two ; whilst in this the straw is smooth, the scales chesnut-coloured, the capsules pubescent, the summits three.

(VERNAL CAREX or SEG. Welsh : *Hesgen gynnar*. E.) On wet heaths, and poor soiled meadows, common. P. April—May.

25. *C. FILIFORMIS*. Sheaths short, inclosing nearly all the fruit-stalk : barren spikes generally two, strap-shaped : fertile spikes egg-shaped, distant : capsules very pubescent.

Linn. Tr. ii. 20. 5—(*E. bot.* 904. E.)—*Scheuch.* 10. 11.

Root creeping. Straw upright, slender, about the length of the leaves, three-cornered, angles acute, rough. Leaves slender, upright, very fine at the end, one to three feet high, rather rough at the edge and on the keel. Spikes generally two barren, and two fertile. *B. spikes*, the upper one an inch and a half to two inches long, the lower hardly one inch, both slender. *F. spikes* mostly two, the upper one often sessile ; sometimes one on a very short fruit-stalk, upright, egg-shaped. Sheath short, but entirely enclosing the fruit-stalk, ending in a leaf which is scarcely so high as the straw. Scales oblong, acute, about the length of the capsule. Capsule hairy or woolly, three-cornered, mouth open, cloven. Summits three, hairy, rather thick. The great length of its slender leaves, its almost woolly capsules, and the male spikes never being more than two, readily distinguished it from every other *Carex*. Gooden. *F. spikes* oblong ; sometimes three of each sort, when the *B. spikes* are hardly half an inch long. Straw rough only above the spikes.

(SLENDER-LEAVED CAREX. Welsh : *Hesgen freindwf.* E.) *C. tomentosa*. Lightf. At Eaton, Shropshire, found by the Rev. Mr. Williams. South end of Ayr Links. Dr. Hope. Shortwood near Pucklechurch. Rev. G. Swayne.

(Near Stoke, Norfolk. Rev. Mr. Forby. Peat bogs, Anglesey, covering acres of swamp. Rev. H. Davies. Bogs at Lound, Suffolk. Mr. D. Turner. Common in the marshes about Beverley. Teesdale. E.) P. June.

26. *C. FLA'VA*. Sheaths short, inclosing nearly all the fruit-stalk; the upper leaf-like part diverging; B. spike strap-shaped; F. spike roundish; capsules beak-pointed.

Fl. Dan. 1047—(*E. bot.* 1294. E.)—*Leers*, 15. 6—*J. B.* ii. 498. 1—*C. B. Th.* 109—*Lob. Ic.* 15. 1—*Ger. Em.* 17. 1—*Park.* 1187. 2—*H. Ox.* viii. 12. 19.

Root creeping. *Leaves* longer than the straw, rough on the keel and edges. *Barren spike* single, terminal, slender, half to one inch long. *Fertile spike* either all crowded together near the male, or one of them lower down, or, as is mostly the case, all of them at some distance apart. *Sheath* about as long as the fruit-stalk, ending in a leaf standing out, and longer than the straw. *Capsules* three-sided, longer than the scales; beak rather bent, mouth generally entire, and pointing downward. *Gooden.* *Stem* two inches to a foot high, numerous, declining, in the smaller plants leafy up to the spike, but in the larger usually naked upwards, triangular, smooth. *Leaves* pale yellowish green. *Barren spike* closely tiled. *Scales* numerous, bluntly oval, with one longer and larger, pointed and sometimes awned at the base. *Fertile spikes* three or four, at first roundish, afterwards oval; scales oval spear-shaped, yellowish brown, with a green keel and membranous edges; the lower on fruit-stalks, the upper sessile, in the small plants from the bosom of the leaves, and the lowermost sometimes almost at the root. *Floral-leaves*, in the larger plants three, at the base of the lowermost long, expanding, those above shorter, bent back. *Capsules* short and thick, tapering to a point, pale greenish yellow. *Style* divided nearly to the base into three summits. *Woodw.* The length and the horizontal direction of the floral-leaf, together with the globular heads of pointed capsules, render the investigation easy. The long tapering point of the capsules distinguishes this from *C. extensa*. *Gooden.* *Fertile spikes* from two to four.

(Prof. Hooker renders *C. Oederi*, *E. Bot.* 1773, a var. of this species; "smaller, fruit less recurved:" the latter characteristic by no means constant in *C. flava*. E.)

YELLOW SEG. MARSH HEDGE-HOG GRASS. (Welsh: *Hesgen felen*. E.)
Marshes and wet meadows, common. P. May—June.

27. *C. FUL'VA*. Lower sheath inclosing but half the fruit-stalk, upper ones nearly the whole. Fertile spikes two, oblong, acute. Capsules beak-pointed: (straw scabrous. E.)

Linn. Tr. ii. 20. 6—(*E. Bot.* 1295. E.)

Root creeping. *Straw* slender, upright, nearly a foot high, three-cornered, angles acute, rough. *Leaves*, upright, narrow, rough at the edge and on the keel, shorter than the straw. *Barren spike* one, terminating, slender, pointed, half an inch long or more. *Fertile spikes* two (very rarely three), often distant, egg-oblong, acute, lower one on a longish fruit-stalk, upper one nearly sessile. *Floral-leaf*, lower one upright, as tall as the straw, sheathing about half the fruit-stalk. *Capsules* somewhat three-cornered, expanding, but not diverging, beak-pointed and cloven at the end, fully as long as the scales. *Summits* three. (This plant was, at one period, abandoned as a species by the great expounder of the genus, but its claims to distinction have latterly been urged by a majority of

learned Botanists. It nearly approximates *C. distans*, but the capsule is more decidedly beaked, and greatly broader and rounder. E.)

- (TAWNY SEG. E.) *C. flava*. var. With. to Ed. 7. *C. fulva*. Sm. Hook. Winch.) In bogs and marshes, not so frequent as the preceding species. Near South Shields, and at Hilton, Durham: at Birch Carr, near Darlington: at Prestwick Carr, Northumberland. Mr. Winch. Roadside between Montrose and the North Esk river. G. Don in Hook. E.) Eaton near Salop, found by the Rev. Mr. Williams. Cherry Hinton Fen, Cambridgeshire, and on the borders of Llyn Idwell Lake, Carnarvonshire. Mr. Griffith. P. May—June.

28. *C. EXTEN'SA*. Sheaths very short, inclosing all the fruit-stalk, the upper leaf-like part somewhat reflexed; spikes crowded; fertile spikes nearly globular: capsules egg-shaped, acute.

(E. Bot. 833. E.)—*Linn. Tr.* ii. 21. 7.

Straw a foot high or more, three-cornered, angles bluntish, smooth. *Leaves* narrow, towards the ends rough at the edge and on the keel. *Barren spike* one, slender, half an inch long, terminating. Sometimes a second male spike, much shorter. *Fertile spikes* generally crowded at the base of the male, but sometimes the lower one is at a considerable distance, egg-shaped, or conical, pointed, on short pedicles. *Scales* egg-shaped, dagger pointed. *Floral-leaves* at the base of the female spikes, entirely sheathing the short fruit-stalk, ending in a leaf as tall or taller than the straw, but at length reflexed. *Capsules* smooth, expanding, egg-shaped but somewhat triangular, twice as long as the scale, pointed and cloven at the end. *Summits* three. Taller, more slender, and the leaves narrower than in *C. flava*. Gooden. (A strong affinity between *C. extensa*, *flava*, and *Ederi* is generally admitted, and authorities differ in opinion as to their identity and genuine characteristics. Among other Botanists who deem them perfectly distinct, the Rev. Hugh Davies proposes definitions which appear worthy of consideration. See Welsh. Bot. p. 86. E.)

- (LONG BRACTEATED CAREX. Welsh: *Hesgen hiriau*. E.) *C. flava*. var. β. Huds. Not uncommon on Hinton and Shelford moors. Relhan. E.) Marshy ground near Harwich, and on the west side of Braunton Burrows, in the north of Devon. Goodenough. (The Park, near Liverpool. Dr. Bostock. Cley Beach, Norfolk. Rev. Mr. Bryant. Bottisham Load, in a ditch crossing the path to Stapleford, near the Nine Elms, Cambridgeshire. Relhan. In a marsh above Southwick, and near Waskerley, Durham. Mr. Winch. Aberffraw, below the bridge, Anglesey. Welsh Bot. E.)

29. *C. DISTANS*. Lower sheath inclosing about half the fruit-stalk; upper ones nearly the whole: spikes oblong, very far asunder; capsules acute.

(E. Bot. 1234. E.)—*Fl. Dan.* 1949.—*H. Ox.* viii. 12. 18.

Root fibrous. *Straw* one to two feet high, three-cornered; angles acute, smooth. *Leaves* rough on the edge and the keel. *Barren spike* one, sometimes two, terminating, slender, about one inch long. *Fertile spikes* three, egg-oblong, an inch in length, on fruit-stalks, far asunder. *Sheath*, the lower one embracing fully half, the upper ones the whole of the fruit-stalk; ending in a leaf shorter than the straw. *Capsules* rather triangular, tapering to a point, slightly cloven at the end, longer than the scales. *Summits* three. *C. hirta* has the fertile spikes far asunder,

as in this species ; but it has hairy leaves and capsules. Gooden. When there are two barren spikes, the under one is much the smallest, and the upper fertile spike has sometimes stamiferous florets at the top. In a young state the lower spike as well as the others has its fruit-stalk entirely enveloped in the sheath. The distance between the fertile spikes increases considerably after the flowering has begun ; that part of the character, therefore, is not striking when the plant first commences its inflorescence ; but Dr. Goodenough observes, that it is sufficient if the characters apply when the plant is in its most complete state of inflorescence, and the capsule has assumed its proper shape. It sometimes bears only two fertile spikes.

DISTANT-SPIKED SEG. (Welsh: *Hesgen anghysbell*. E.) Marshes. Edge of Giggleswick Tarn, and near the tops of the highest mountains in Yorkshire. Curtis. Bogs about Manchester, common. Mr. Caley. (At Yarmouth, Norfolk. Sir J. E. Smith. In a marsh near Hilton Castle, Durham. Winch Guide. Near the coast, Anglesey. Welsh Bot. Oversley and Coughton, Warwickshire: Feckenham Moors, Worcestershire. Purton. In Clifton Pasture, Bulwell, and Papplewick, Notts. E.) In the bog at the source of the river Yar, in the Isle of Wight.

P. May—June.

Var. 2. *C. binervis*. Sm. E. Bot. 1235. With. to Ed. 7. *C. distans*. Lightf. Hook. Grev. Prof. Hooker observes, that the two principal ribs upon the fruit, which induced Smith to give the name *binervis*, are nothing more than the margined angles which are common to many other individuals of this genus. E.) Larger than the above, with a firmer stem, of a deeper green colour, with a glaucous tinge. The inner side of the fruit is most stained with purple, and has many uniform ribs. (It varies in height from four or five inches to as many feet. Rev. Hugh Davies. E.)

Near Rippon. Mr. Brunton. About Edinburgh. Very common on the dry moors about Aberdeen. Prof. Beattie. (Frequent in Anglesey. Welsh Bot. E.) P. June.

30. *C. PANICEA*. Lower sheath inclosing about half the fruit-stalk : upper ones nearly the whole ; spikes slender, upright, far asunder ; capsules inflated, bluntish, rather distant.

(*E. Bot.* 1505. E.)—*Leers*, 15. 5—*Mich.* 32. 11—*Fl. Dan.* 261.

Leaves rather rough at the edge and on the keel. *Fertile spikes* three, distant from each other, florets thinly set. *Sheaths* ending in leaves shorter than the straw. *Capsules* compressed at the base, swelling out upwards, bluntish, mouth entire, closed. When young, it much resembles *C. recurva*, but may be readily distinguished by the sheaths, the lower one in *C. panicea* being half as long as the fruit-stalk, but in *C. recurva* only one quarter the length. Gooden. *Root* creeping, throwing out bundles of leaves and stems from the joints. *Stems* bluntly triangular, smooth, twelve to eighteen inches high. *Leaves* smooth, sea-green, shorter than the stem. *Barren spike* terminal, more than an inch long, closely tiled. *Scales* oval. *Fertile spikes* mostly two, upright, loosely tiled. *Fruit-stalks* long, slender, each from a joint. *Floral leaves* sheathing, one at the base of each fruit-stalk, as long as the spike which belongs to it. *Flowers* alternate, many abortive. *Scales* egg-shaped, or egg-spear-shaped, not above half as long as the capsule. *Summits* three. *Capsules* oval, bluntly pointed. Woodw.

PINK SEG. (Welsh: *Hesgen bennigen-ddail*. E.) Moist meadows, pastures, and moors. P. May—June.*

31. *C. CAPILLARIS*. Sheaths inclosing half the fruit-stalk; fertile spikes oblong, flaccid, pendent when ripe; fruit-stalk capillary; capsules tapering to a point.

(*E. Bot.* 2069. E.)—*Dicks. H. S.—Fl. Dan.* 168—*Scop.* 59.

Root fibrous. *Straw* two to five inches, upright, three-cornered, angles smooth. *Leaves* very slender. *Barren spike* single, terminal, slender, of very few flowers. *Fertile spikes* two (or three), few flowered. *Capsules* egg-shaped, beak-pointed, entire at the end, longer than the scales, which are deciduous. *Summits* three. The small size of this plant, fine slender fruit-stalks, pendulous female spikes with four to eight florets, and deciduous scales, are amply sufficient to distinguish it. Gooden. (*Leaves* scarcely two inches long, mostly radical, narrow, acute, dark green, slightly keeled, rough edged towards the top only. *Fruit* dark brown, ovate, triangular, smooth, with a sharp beak. *Seed* elliptical, with three sharp angles. *E. Bot.* E.)

CAPILLARY SEG. In pasture grounds at alpine heights. (In bushy moist places. E.) On Benteskerney and Malghyrdy in Glenlochail. Also on Ben Lawers and on Craig Cailleach, both in Breadalbane. Mr. Brown. (Whey Sike, Cronkley Fell, and Widdy Bank, Durham. Rev. J. Harri-man. *Bot. Guide.* About Malvern Hills. Duncumb. E.) P. July—Aug.

- (32. *C. MIELICHOFFERI*. Sheaths scarcely half the length of the fruit-stalk: fertile spikes distant, erect, lax: capsule triangular, notched.

E. Bot. 2293.

Stems eight to twelve inches high. *Leaves* dark green, strap-shaped. *Glumes* egg-shaped, ferruginous, with a green nerve. *Capsule* green till fully ripe. *Fertile spikes* one to three.

LOOSE-SPIKED ROCK CAREX. Summit of Cairn Gorum. Mr. G. Don. Mountains of Clova. Mr. D. Don. P. June—July. Hook. E.)

(Here may be noticed *C. spirostachya*. Sw. (*C. distans*. Fl. Dan. 1019.) and *C. phacostachya*. (*C. salina*. Don.) both natives of the Scottish mountains, considered as distinct species by Smith, in Eng. Fl., though that author admits that "the characteristic marks are not easily defined." E.)

33. *C. DEKAUPERA'TA*. Sheaths inclosing less than half the fruit-stalk; fertile spikes distant, few-flowered; capsules egg-shaped, inflated, beak-pointed.

Curt. 68—(*E. Bot.* 1098. E.)—*Mich.* 32. 5.

Root fibrous. *Straw* one to two feet high, three-cornered, angles smooth, bluntish. *Leaves* shorter than the straw, rough on the edge and the keel. *Barren spike* single, terminal, slender. *Fertile spikes* on long fruit-stalks, far asunder, with three to six florets, not crowded together. *Sheath* enfolding about a third of the length of the fruit-stalk, ending in a leaf which is generally taller than the straw. *Capsules* often in two

* Capsules often affected with the smut, in which case they become globular, larger, black, and full of a mealy powder. Almost all the other species are occasionally liable to the same disease. LAM.

rows, about twice the length of the scales; mouth entire. *Summits* three. Gooden. *Barren spike* half to three quarters of an inch long. *Fertile spikes* about three. *Capsules* only two or three on a spike, distant, about the size of hemp-seed. Woodw. (*Spikes* very distant; their few *flowers*, and large inflated beaked fruit, decidedly mark this species Hook. E.)

(STARVED WOOD CAREX. E.) *C. ventricosa*. Curt. First found by Rev. Dr. Goodenough in Charlton Wood, near Dover, and since by Mr. Dickson in dry woods, near Godalmin, in Surry. (In a lane leading to Darn Wood, near Dartford. Mr. Sole. Woods near Forfar, rare. Mr. G. Don. Hook. Scot. E.) P. May—June.

34. *C. SYLVATICA*. Sheaths short; spikes thread-shaped, flaccid, pendent; capsules egg-shaped, ending in an awn-like beak.

Dicks. H. S.—(E. Bot. 995. E.)—*Leers* 15. 2—*H. Or.* viii. 12. 9—*Fl. Dan.* 404.

Sheaths inclosing about a quarter of the length of the fruit-stalks. Gooden. Its pendent spikes, the pale yellow green of its leaves, and the bend of its stem, which seems to form part of an elliptical curve, give it a very pleasing appearance, and render it one of the most elegant ornaments of our woods. St. *Root* creeping. *Leaves* in tufts from the joints of the root, yellowish green, about one-fourth of an inch wide, rough to the touch. *Stems* numerous, in tufts, twelve to eighteen inches high, triangular, rough at the edges, leafy. *Fertile spikes* four or five, distant, when in seed pendent, one to one and a half inch long, loosely tiled. *Flowers* alternate. *Capsules* smooth, triangular, with obscure edges, and a beak nearly as long as the capsule; cloven at the end. *Style* divided almost to the base into two, and sometimes into three summits. *Barren spikes* terminal; about an inch long, slender, closely tiled. Woodw.

PENDULOUS WOOD SEG. (Welsh: *Hesgen dibynaidd y goedwig*. E.) *C. vesicaria* β. Linn. Woods, common. P. May—June.*

35. *C. RECURVA*. Sheaths short; fertile spikes nearly cylindrical, pendent; capsules roundish, egg-shaped; roots creeping.

(E. Bot. 1506. E.)—*Leers* 15. 3—*Fl. Dan.* 1051—*H. Or.* viii. 12. 14.

Straw triangular, angles smoothish, sea-green, about a foot high. *Leaves* the same glaucous green at the stem; very rough on the keel and the edges. *Barren spike* one or two, rarely three, terminal slender, about an inch long. *Fertile spikes* three, the same length, but thicker, on long fruit-stalks, pendent when ripe; far asunder. *Sheaths* inclosing scarce a fourth part of the length of the fruit-stalk, broad at the base, but ending in a leaf often taller than the straw. *Capsules* egg-shaped, indistinctly three-sided, bluntish, a little cottony, closed at the mouth, rather longer than the scales. *Summits* three, thick, downy. Varies much in size and habit, but the pendent black fertile species, the glaucous leaves, the short sheaths, the roundish capsules, the smoothish straw, and the creeping root, are obvious distinctions. Gooden.

HEATH SEG. (GLAUCOUS HEATH CAREX. Welsh: *Hesgen oleulas wrygam ddail*. E.) Moist meadows, pastures, heaths, and woods. Wet woods in the New Forest, plentiful. Pastures near Thornbury, Gloucestershire. (King's Park, and Pentland Hills. Grev. Edin. Mr. Borrer,

* (The Laplanders prepare a coarse clothing from this plant. Linn. E.)

in Bot. Guide, remarks that it occurs every year in the Withy Copse, West Town, Sussex, with branched spikes. E.) P. May—June.

(Var. 1. Differs from the usual state, in having numerous barren spikes, and a smooth fruit. The turgescence of the fruit prevails more or less according to its age and perfection.

E. Bot. 2236—Mich. 32. 12.

C. Micheliana. Fl. Brit. The author of which work has lately become convinced that this plant has no permanent specific distinction.

In wet grounds near Aberdeen. Near Beverley. Mr. Teesdale. Near Rippon. Mr. Brunton. E.)

36. *C. PALLES'CENS*. Sheaths extremely short; fertile spikes rather cylindrical, pendent when in fruit; capsules oblong, blunt.

Dicks. H. S.—(Hook. Fl. Lond. 1780—E. Bot. 2185. E.)—Fl. Dan. 1050—Pluk. 34. 5—Mich. 32. 13—Leers 15. 4.

Root fibrous. Leaves narrow, rough on the keel and the edge, (slightly hairy. Barren spike single, terminal. Fertile spikes three, all near together, blunt, on fruit-stalks. Sheaths not inclosing more than an eighth part of the fruit-stalk, but ending in a leaf much taller than the stem. Capsules closely crowded, oblong, blunt, somewhat longer than the scales, mouth entire. Summits three. Fertile spikes when in flower egg-shaped, when fully ripe, nearly cylindrical. Gooden. Stems many, one to two feet high, triangular, roughish, leafy below, naked upwards. Leaves in bundles from the root, yellowish green, the lower short, the upper nearly as long as the stem. Barren spike half to three quarters of an inch long, slender, closely tiled, with sometimes a single fertile flower at its base. Scales oval-spear-shaped. Fertile spikes one to three, the lowermost on a very short, slender fruit-stalk. Scales oval, pointed. Summits three. Capsules oval, pale yellowish green. Woodw.

PALE SEG. Moist meadows and pastures. Woods on a moist clayey soil in Norfolk and Suffolk, frequent. Woodw. Wet woods in gravelly soil in the New Forest. (At Birch Carr, near Darlington. Mr. W. Backhouse. Winch Guide. Pentland Hills, in many places. Grev. Edin. E.) P. May—June.

37. *C. LIMO'SA*. Sheaths hardly any; fertile spikes egg-shaped, pendent; capsules egg-shaped, compressed; roots creeping.

(E. Bot. 2043. E.)—Fl. Dan. 646—Willd. 1. 4—Scheuch. 10. 13.

Root jointed, throwing out at the joints long fibres, and tufts of leaves and stems. Leaves long, bright green, rough, the uppermost nearly as long as the stem. Stems slender, triangular, rough, (eight to twelve inches high. E.) Barren spike; scales spear-shaped, the lowermost awned, yellowish brown, with a green keel. Fertile spike generally single, loosely tiled, on a long slender fruit-stalk. Scales oval-spear-shaped, taper-pointed, of a very rich shining brown, with a yellowish green keel. Floral-leaves, one at the base of the lowermost spike, if more than one; very slender, about an inch long. Capsules oval, bluntish, bright sea green. Summits long. Woodw. Distinguished from *C. recurva* by its very short sheath, its egg-shaped fertile spike, and by the shape and colour of its capsules, which are brown when ripe, and not black. Gooden. Barren spike single, slender, not an inch long. Capsules rather longer than the scales, taper-pointed, entire at the end. Summits three. Fertile spikes one or two, few-flowered.

MUD SEG. (GREEN AND GOLD CAREX. Welsh: *Hesgen curwerdd*. E.) *C. elegans*. Willd. Woodw. Peat bogs and marshes, Yorkshire, Lancashire, Westmoreland, &c., frequent. Huds. Tullybanchar, half a mile west of Comrie near Crief. Mr. Stuart in Fl. Scot. Heydon, Norfolk. Bryant. St. Faith's Newton Bogs. Mr. Woodward. Moss of Restenat, Scotland. Mr. Brown. Peat bog on Mendip Hills. Rev. G. Swayne. (On Salsbri Farm, in Llanbadrick, Anglesey. Welsh Bot. Mr. Winch has never detected this plant either in Northumberland or Durham. E.) P. June.

- (38. *C. RARIFLORA*. Sheaths almost none; fertile spikes narrow, very few-flowered, pendulous; bracteas subsetaceous; capsule egg-shaped, rather acute, striated.

E. Bot. 2516.

Root much creeping, *Stem* six inches high. *Leaves* half that length. *Cal. grumes* very deep brown. Nearly allied to *C. limosa*, and united to it by Wahlenberg, but in the opinion of Prof. Hooker distinct.

LOOSE-FLOWED ALPINE CAREX. Mountain at the head of the Glen of Doll, Angus-shire. P. June. Hook. E.)

39. *C. PSEUDO-CYPERUS*. Sheaths hardly any; fertile spikes cylindrical, on fruit-stalks, pendent; capsules awn-beaked, rather diverging,

(*Fl. Dan.* 1117. E.)—*E. Bot.* 242—*Dod.* 339—*Lob. Ic.* i. 76. 2—*Ger. Em.* 29. 2—*Park.* 1266. 4—*C. B. Th.* 85—*J. B.* ii. 496. 3—*H. Ox.* viii. 12. 5.

Stem one and a half to three feet high, leafy below, naked above, triangular, edged with sharp teeth, with a joint near the top. *Leaves* forming thick tufts, long, broad, finely toothed, edges cutting. *Floral-leaves* similar to the other leaves, the lowermost broad, often more than a foot long, at the joint at the top of the stem, those above narrower and shorter. *Fertile spikes* from the bosom of the floral-leaves, at a small distance one above the other, sometimes two together, the lowermost on a long slender fruit-stalk, when in flower upright, when in fruit pendent, from three to five, all rising to nearly the same height; *scales* green, awl-shaped, longer than the capsules, finely toothed at the edges, and on the back. *Capsules* pale green, spear-shaped, obscurely three-square, elegantly ribbed. *Style* divided into three summits, scarcely longer than the awns of the capsule. *Barren spike* terminal, two inches long. *Scales* closely tiled, yellowish brown, ending in a long awn, toothed like the stem, and longer than the filaments. Woodw. *Root* fibrous. *Capsules* rather tumid in the middle. The minuteness of the sheaths, the long points, and the wide distance of the capsules, are sufficient to distinguish it. The intermediate fruit-stalks are sometimes found doubled. Gooden. *Capsules* when young pointing upwards, but expanding, when more advanced horizontal, when quite ripe pointing downwards.

CYPERUS-LIKE CAREX. BASTARD SEG. Moist shady places, banks of pools and ditches, common. P. June.

- (40. *C. USTULATA*. Sheaths elongated, shorter than the flower-stalks: fertile spikes pendulous: bracteas nearly leafless: capsule elliptical, compressed, beaked, bifid at the apex.

E. Bot. 2404.

Stems about a span high, leafy at the base; with short, rather broad *leaves*. *Fertile spikes* two, remarkable for their blackened hne.

SCORCHED ALPINE CAREX. Mountains of Clova, and Ben Lawers. Mr. G. Don. P. July. Hook. E.)

41. *C. ATRA'TA*. Sheaths hardly any; all the spikes with barren and fertile florets; upper spikes on fruit-stalks, when in fruit, pendent; capsules egg-shaped, rather pointed.

(*E. Bot.* 2044. E.)—*Fl. Dan.* 158—*Scheuch.* 11. 1 and 2.

Root fibrous. *Straw* triangular, a foot high, angles acute, roughish.

Leaves broad, shorter than the straw, rough at the edge and on the keel.

Upper spike mostly fertile, the lower part only barren, with an intermixture of perfect florets; which is often the case with the others. *Spikes* oblong, acute, half an inch high, on long fruit-stalks, near together: pendent when ripe. *Scales* black, with a green keel; rather longer than the capsules. *Floral-leaf*, one to every spike, leaf-like, inclosing a very small part of the fruit-stalk. *Capsule* green, egg-shaped, often acute, compressed, slightly cloven at the end. *Filaments* two. *Style* with three hairy summits. This should, from the disposition of the barren and fertile florets, have been arranged under the second subdivision, but its habit strongly enforces its present situation. The black egg-shaped spikes, and the want of sheaths are sufficient to distinguish it. Gooden.

Leaves ash-coloured sea-green, when dried yellowish green. *Scheuchz.* *Spikes* oval-spear-shaped, when in flower rising nearly to the same height, the uppermost without floral-leaves, unequal, frequently one or two small ones beneath the uppermost; the upper with barren flowers at the base, the rest mostly composed of fertile flowers. *Scales* spear-shaped, black, with a brown keel, but when viewed in a strong light, of an extremely rich reddish brown. *Stamens* two. *Summits* mostly three, sometimes two. Woodw. (Sowerby often finds three stamens. *E. Bot.* E.)

BLACK SEG. Mountains of Wales about Llanberis, plentiful. Highland mountains, frequent. (On rocks in Breadalbane. Mr. Don. Near the summit of Snowdon, and Carnedd Llewellyn. Mr. Griffith. E.)

P. June—Aug.

42. *C. PUL'LA*. Stigmas two; sheaths none; spikes egg-shaped, the lower one stalked; capsules egg-shaped, inflated, with a short bifid beak.

E. Bot. 2045—*Linn. Tr.* 3. 14.

Root thick, creeping. *Leaves* nearly upright, narrow, rough at the edges and on the keel. *Stem* ascending, a span high, three-sided, the acute angles roughish. *Barren spike* terminal, upright, lanceolate, of numerous triandrous flowers. *Fertile spikes* mostly two, remote, egg-shaped, erect, the lowermost on a rough slender stalk, the upper one almost sessile, shortened as it were, and often wanting. *Glumes* all elliptic-lanceolate, obtuse, dark brown, with a thin, narrow, pale edge and an obsolete nerve. *Fruit* rather spreading, longer than the corresponding glume, elliptical, inflated, smooth, without ribs, pale at the base, of a dark shining brown at the summit when ripe, and terminating in a short cloven beak. *Seed* triangular. Gooden.

RUSSET CAREX. Mountains of Scotland. Ben Lawers. Mr. J. Mackay. Ben Lomond. Mr. G. Don. First fully described and figured in *Linn. Tr.* by the Rev. Dr. Goodenough, Bishop of Carlisle. Banks of the Tilt, Perthshire. Anderson. Hook. Scot. P. July. E.)

43. *C. PILULIFERA*. Sheaths none; barren spike slender, fertile, somewhat globular, sessile, crowded; straw feeble.

Dicks. H. S.—(E. Bot. 885. E.)—Fl. Dan. 1048—Leers 16. 6—H. Oz. viii. 12. 16—Pluk. 91. 8.

Root fibrous. *Straw* three to six inches long, or more, curved, three-cornered, angles acute, rather smooth. *Leaves* fine yellowish green, slender, shorter than the straw, upwards rough at the edge and on the keel. *Barren spikes* single, strap-shaped, terminal. *Fertile spikes* three, at the base of the male, near together, oblong, acute, more globular when ripe; the two lower ones with a short, sessile, green floral-leaf; the upper one with the floral-leaf, membranous, egg-shaped, keeled, ending in a slender green point. *Scales* as long as the ripe capsules. *Capsules* turning black, roundish, somewhat cottony, ending in a short, bluntish, undivided point. *Summits* three. The globular form of the fertile spikes is occasioned by the terminal florets being usually barren, and deciduous; as these wither away, the spikes assume their round form, otherwise they are in general oblong. (Readily distinguished by the pubescent, almost spherical capsules, which give name to the species. Hook. E.)

ROUND-FRUITED SEG. (Welsh: *Hesgen bengron*. E.) *C. montana*. Fl. Suec., not *C. pilulifera*. Syst. Veg. Moist heaths and pastures, not uncommon: (often growing amongst gorse bushes. E.) Bath Hills, Bungay, Suffolk. Mr. Woodward. On a dry bank facing Llanberris village, on the ascent towards Llyn y Cwn. Mr. Griffith. (The Park, Liverpool. Dr. Bostock. In Anglesey. Welsh Bot. E.) P. April—June.

(44. *C. TOMENTOSA*. Sheaths extremely short; fertile spikes nearly sessile, cylindrical, obtuse; glumes elliptical, acute; fruit downy.

E. Bot. 2046—Leers 200. 15. 7.

Root creeping, with long and compound fibres. *Stems* at root or more in height, erect, naked, with three sharp angles, rough upwards. *Leaves* shorter than the stem, upright, flat, grass-green, rough on both sides and at the edges. *Bracteus* leafy, rather spreading, the longest rising somewhat above the stem, with scarcely any sheath. *Barren spike* lanceolate, bluntish, with spear-shaped rusty scales having green keels, the upper ones occasionally pointed. *Fertile spikes* usually two, not very distant, almost sessile, cylindrical, blunt, various in length, their glumes elliptic-ovate, slightly pointed, rusty, with broad green keels. *Fruit* about as long as the scales, crowded, roundish, scarcely at all compressed, and but slightly triangular, green, clothed with short dense whitish down. *Beak* short and cloven. *Seed* pale, obscurely triangular. E. Bot. It is most akin to *C. præcox* and *pilulifera*, but is much larger, and the red sheaths of the radical leaves, as in *C. digitata*, are very striking at first sight. Sm. in Linn. Trans. v. 5.

LARGER DOWNY-FRUITED CAREX. This plant has been ascertained by Smith to be the real *C. tomentosa* of Linnæus, new to the British Botanist, and discovered by Mr. R. Teesdale, in meadows near Merston Measey, Wiltshire. P. June. E.)

45. *C. RIGIDA*. Summits two; sheaths none; spikes oblong, nearly sessile: leaves rigid, recurved.

(E. Bot. 2047. E.)—Fl. Dan. 159—Linn. Tr. 22. 10—Mich. 32. 4.

Root thick, creeping. *Straw* four or five inches high, curved, three-cornered, angles very rough, rigid. *Leaves* dark, and rather glaucous green, rigid, curved, shorter than the straw, towards the end rough on the edge and on the keel. *Barren spike* single, (rarely two), terminal, oblong, pointed, three-fourths of an inch long. *Scales* black, egg-shaped, very

blunt. *Fertile spikes* three, near the barren ones, the lower farther off, oblong, pointed, sessile, (the lower often on a fruit-stalk) three-fourths of an inch long, florets closely compacted, but the lower ones more distant, one or two at the top, chiefly on the upper spikes, barren. *Scales* black, very blunt, but half the length of the right capsule. *Floral-leaf*, one to each spike, broad at the base. *Capsules* egg-shaped, blunt, entire at the end, smooth, flattened on one side; sometimes longer, taper-pointed, and crooked. *Summits* two, thick, white, hairy. This plant differs from *C. montana* of Huds. by having no sheath, two summits and smooth capsules; it differs also from *C. saxatilis* of Linn. by being thicker and a much smaller plant; and from both by the great rigidity of its leaves and its crooked straw. By its rigid and spreading leaves it may be known from *C. caespitosa*, whose leaves are upright and soft, as well as from the *stricta* which is altogether upright. Gooden.

RIGID CAREX. (*C. caespitosa* β. Hook. who considers the apparent difference to arise from the different places of growth. E.) On the top of Snowdon. Hudson. On the Scottish Alps. Dickson. Crib y Ddeseil: (also near the summit of Cader Idris and Carnedd Llewellyn. Mr. Griffith. Ben Lomond. Sir J. E. Smith. Teesdale Moor, near Caldron Snout, Durham. Rev. J. Harriman. On the summit of Cheviot. Mr. Winch. E.) J. May—July.

46. *C. CAESPITOSA*. Summits two; sheath none; spikes nearly sessile, cylindrical, blunt: leaves upright, soft.

Linn. Tr. ii. 21. 8—(E. Bot. 7507. E.)—Park. 1266. 3.

Root creeping very much. *Straw* upright, four to twelve inches high, or more; not rigid, three-square, corners acute, roughish. *Leaves* of a pleasant green with a glaucous cast, soft, upright, tall as the straw, rough towards the end, at the edge and on the keel. *Barren spike* one, (rarely two), upright, terminal, oblong, three-sided, half to one inch long; scales egg-shaped, blunt. *Fertile spikes* two or three, nearly cylindrical, blunt, the lower on a short fruit-stalk, the upper ones without any. *Florets* in six or eight rows, closely tiled. *Scales* egg-shaped, either blunt or pointed, black, shorter than the ripe capsules. *Floral-leaves* at the base of each fertile spike, but not sheathing, dilated and black at the base, generally taller than the straw. *Capsules* egg-shaped, blunty, somewhat compressed, smooth, entire at the end. *Summits* two. It flowers nearly a month later than *C. stricta*, and the capsules in this adhere to the fruit-stalk even in decay, whilst in the *stricta* they fall off as soon as they are ripe. Gooden. (Upper fertile spike sometimes with barren flowers at the end.) The lower florets of the fertile spikes have sometimes three summits.

TUFTED BOG CAREX. (Scotch: *Star*. Welsh: *Sup-Hesgen y fawnog*. E.) Marshes and wet woods. P. April—May.

47. *C. STRICTA*. Summits two: sheaths none: spikes nearly sessile, cylindrical, acute; barren spikes mostly two: leaves upright, stiff, straight.

(E. Bot. 914. E.)—Linn. Tr. ii. 21. 9.

Root creeping very much. *Straw* one to two feet high or more, upright, three-square, corners acute, rough. *Barren spikes* generally two, upright, one to two inches long, three-sided. *Scales* oblong, acute, black. *Fertile spikes* three, one to two inches long, sessile, but the lowermost on a short fruit-stalk, cylindrical, but acute, because of some barren florets at the end. *Scales* oblong, acute, rather shorter than the capsules. *Floral-*

leaves to the fertile spikes leaf-like, sessile, dilated at the base when young, but the expanded part soon vanishes. Capsules compressed, egg-shaped, acute, smooth, entire at the end, disposed in eight rows. *Summits* two, rather thick, hairy. Has often been supposed the same as *C. caespitosa*, from circumstances common to both; but in *C. stricta* the root-leaves which sheath the bottom of the straw have this sheathing part split into threads like open net-work: they too, as well as the floral-leaves, are shorter than the straw at the time of flowering. The floral-leaves, particularly the lower ones, have either no expanded appendages at the base, or only oblong ones, which are presently so elongated as to disappear, that is, to lose all their expanded form. The fertile spikes are acute, owing to their being terminated by barren florets; the scales are all acute, the capsules are set in eight rows, and the barren spikes are mostly two; on the contrary, *C. caespitosa* wants the fibrous texture in the sheathing part of the root-leaves; these leaves equal the height of the straw at the time of flowering, and the floral-leaves are taller. The floral-leaves have always round expansions on each side their base, which do not change their shape; the fertile spikes are blunt, and have no barren florets at the end. The capsules are set in six, rarely in eight rows, and there is seldom more than one barren spike. In its general appearance also it is a much smaller, weaker, and softer plant. Gooden.

(GLAUCCUS STRAIT-LEAVED CAREX. *C. caespitosa* β. Lightf. Welsh: *Hesgen obulas syth-ddaile*. E.) Found by Mr. Pitchford in marshes near Norwich. Hall Wood, near Newmarket. Relhan. (Pilmoor Pool, Weston, Staffordshire, where it forms large firm tufts. Rcv. S. Dickens, son. In the marsh behind St. Anthony's Ballast Hill; and in Heaton Wood, Northumberland. Winch Guide. In Llanfihangel, Anglesey. Welsh Bot. Banks of the Water of Leith. Grev. Edin. E.) P. April.

(5) *Spikes, some barren, others fertile: barren spikes two or more.*

[*C. filiformis*, *stricta*, *recurva*, and some others, which have, though rarely, two barren spikes.]

48. *C. RIPARIA*. Spikes oblong, barren, acute; scales of the barren spear-shaped, of the fertile tapering to an awn-like point: capsules egg-spear-shaped, cloven into two teeth at the end.

Curt. 281.—(E. Bot. 579—Fl. Dan. 1118. E.)—H. Ox. viii. 12. 1—Leers 16. 2—Mich. 32. 6 and 7.

Root thick, creeping very much. Straw two feet high or more, upright, firm, three-square, angles very acute and rough. Leaves broad, upright, glaucous, pale on the upper side, blackish green underneath, very rough on the edges and the keel. Barren spikes three, terminal, pointed, oblong, but three-sided, crowded together. Fertile spikes three, oblong, mostly pointed with barren florets, upright, lower ones on fruit-stalks. Scales black, longer than the capsules. Floral leaves the lower ones in some degree sheathing the fruit-stalks, upper ones expanded at the base. Capsules tiled in eight rows, oblong-egg-shaped, taper-pointed, marked with fibres, forked at the end. *Summits* three. The black, triangular, acute, barren spike and the cloven pointed capsules, preclude the possibility of mistaking this species. Gooden. (The serrated awns of the calyx mentioned by Curtis are not constant; nor is the keel of the leaves rough, except towards the point. The sides of the straw are rather flat than concave. E.)

GREAT COMMON SEC. (Welsh: *Hesgen braff-dywyssenog*. *C. acuta*. Lightf. E.) *C. acuta* a. Huds. Banks of rivers, ponds, and ditches, also in meadows, where it is much smaller. P. April—May.*

49. (*C. LÆVIGATA*. Spikes cylindrical, fertile ones on stalks; sheaths very long; glumes pointed; fruit triangular, with a cloven beak.

E. Bot. 1387—*Schkuhr. t. z. f.* 83.

Much like *C. vesicaria* not fully grown. It is distinguishable by the long stalks of its fertile spikes, and especially by the tunic of the seeds never becoming inflated. The remarkable smoothness of its whole stem and principal leaves, the upper floral leaves only being rough at the edges, and the lower ones merely at the tip, is a ready and permanent difference between this plant and all with which it might be confounded. Spikes become rusty, not black with age. Their glumes have rough points. The barren are one or two; fertile two, three, or four. Sometimes a starved spike of perfect flowers has been observed by Mr. J. Sowerby.

SMOOTH-STALKED BEAKED CAREX. (Welsh: *Hesgen yffinog*. *lefa*. E.) In marshes. In a marsh near Glasgow. Mr. Mackay. Near Aberdeen. Mr. Beattie. In a boggy thicket near Warley Common, Essex. Mr. E. Forster; also in Great Shrub Bush, a wood near Wanstead. (In Tyfry demesne, Anglesey, on the side of a deep glen south of the mansion. Rev. Hugh Davies. E.) P. May. *Fl. Brit.* E.)

50. *C. PALUDOSA*. Spikes oblong, rather blunt; scales of the barren ones blunt, of the fertile spear-shaped; capsules egg-spear-shaped, slightly toothed at the end.

(*E. Bot.* 807. E.)—*Curt.* 280.

Root greatly creeping. *Straw* one or two feet high, unequally three-cornered, angles acute, rough. *Leaves* nearly half an inch broad, glaucous green, red at the base, shorter than the straw, upright, edges and keel rough. *Barren spikes* three, terminal, near together, oblong, blunt, three-sided, angles bluntish. *Scales* brown, oblong, blunt. *Fertile spikes* three, oblong, blunt, but if terminated by barren florets, acute, upright, some on short fruit-stalks, florets closely and compactly tiled; scales brown, spear-shaped, very acutely pointed, mostly longer than the capsules. *Floral-leaf*, one to each fertile spike, somewhat sheathing the fruit-stalk, seldom expanded at the base. *Capsules* tiled, generally in eight rows, egg-spear-shaped, rather acute, at first entire at the mouth, but when ripe showing two very short little teeth. *Summits* three. Approaches near to *C. riparia*, but in that the scales of the barren spike are very acute, in this always blunt. In this, the capsules are either entire, or only slightly cloven at the end; in that, they have a beak which is forked. Gooden. *Barren spike* one and a half or two inches long; *fertile*, sometimes three inches or more. *Straw* not always rough.

(**LESSER COMMON CAREX.** Welsh: *Hesgen ganolig-dywyssenog*. E.) *C. acuta*. *Curt.* Marshes and banks of wet ditches, often found with *C. riparia*. P. April—June.

51. *C. ACUTA*. Summits two; spikes thread-shaped; fertile spikes nutant whilst in flower, upright when ripe; capsules rather acute, entire at the end.

* (*Phryganea alba*, a kind of May-fly, frequents the black flower-spikes, and is not easily distinguished from them; by which similitude it often escapes the ravages of birds, which pass it by unobserved. E.)

Dicks. H. S.—(E. Bot. 580. E.)—Curt. 282.—H. Oz. viii. 12. 3.

Root creeping. Straw varying in height from three inches to two feet or more; three-square, angles very acute and rough. *Leaves* narrow, upright, of a pleasant green, shorter than the straw, rough at the edges and on the keel. *Barren spikes* two, rarely three, slender, one to three inches long, scales oblong, blunt, black. *Fertile spikes* three, slender, lower ones sometimes on fruit-stalks, pendulous when in flower, upright when ripe, generally terminated by some barren florets, and therefore pointed. *Scales* oblong, acute, black, rather shorter than the capsules. *Floral-leaf* one at the base of each fertile spike, often expanded at the bottom. *Capsules* mostly disposed in eight rows, egg-shaped, acute, compressed, closely tiled, entire and closed at the end. The slender habit of this plant in all its parts, its thread-shaped spikes drooping whilst in flower, its two summits, and its compressed flattish capsules entire at the end, keep it distinct from every other species. Gooden. *Fertile spike* as long as the terminal barren spike. Curt.

(Mr. Bruntan (Bot. Guide. p. 716.) reports a curious variety of this plant found near Rippon, in which the stamens grow out of the tunic of the seed; and another still more remarkable has been communicated to Mr. Dawson Turner, from Copgrove, Yorkshire, by the Rev. J. Dalton, with very numerous barren spikes, the lower fertile ones on long peduncles, the spikes nearly as large as those of *C. riparia*, and the glumes awned and much longer than the fruit. E.)

SLENDER SPIKED SEG. (Welsh: *Hesgen ciddil-dyrysennog*. E.) *C. gracilis*. Curt. *C. acuta* β. *Fl. Succ.* Edges of rivers, ponds, and ditches, and also in meadows. Flowers a week or two later than *C. riparia* and *paludosa*. P.

52. *C. VESICARIA*. Barren spikes strap-shaped; fertile ones oblong, expanding: capsules inflated, oblong, beak-pointed, expanding.

Fl. Dan. 647—(E. Bot. 779. E.)—*Leers* 16. 2. III.—*H. Oz.* viii. 12. 6—*Barr.* 113. 1.

Root creeping. Straw two feet high, three-square, angles very acute and rough. *Leaves* pale green, taller than the flowering straw, narrow, edges and keel rough. *Barren spikes* terminal, upright, upper one, one to two inches long, the other shorter, slender, somewhat three-cornered: scales oblong, rather blunt, yellow. *Fertile spikes* on fruit-stalks, nearly upright, one to two inches long: scales spear-shaped, but narrow, and very acutely pointed, pale, at first twice the length of the capsule, afterwards only half its length. *Floral-leaf*, one at the base of every female spike, taller than the straw. *Capsules* loosely disposed, expanding, smooth, yellowish, egg-oblong, taper, and almost beaked at the end, which is cloven. *Summits* three. Its yellow hue, narrow short scales, and inflated smooth conic capsules, point it out beyond all danger of mistake. Gooden.

BLADDER SEG. (*C. inflata*. Lightf. Welsh: *Hesgen chwysigenaidd*, *ber-dywysennog*. E.) Marshes. Woods in the New Forest, Hampshire. Edgbaston Pool, near Birmingham. (Near Bodgylchad Lake, Beaumaris. Rev. H. Davies. Bot. Guide. Wisbech, in a field near the New Common Bridge, Cambridgeshire. Mr. Skrimshire, ditto. Near Castle Eden and Darlington, Durham; also in Heaton Wood, and at Prestwick Carr, Northumberland. Mr. Winch. In a pit of water near Great Ahe, Alcester. Purton. E.) P. May—June.

53. *C. AMPULLA* OEA. Spikes thread-shaped, the barren thinnest, fertile ones cylindrical, upright; capsules inflated, globular, awn-beaked, diverging.

(*E. Bot.* 780. E.)—*H. Oz.* viii. 12. 8—*Leers* 16. 2. II.

Root creeping very much. *Straw* one to two feet high, upright, three-square, angles acute, rough upwards, but smooth below the lowest spike. *Leaves* glaucous, upright, narrow, longer than the straw, generally rough at the edges and on the keel. *Barren spikes* two or three, strap-thread-shaped, upper one, one to two inches long, the others shorter. *Scales* oblong, either blunt or acute, yellowish. *Fertile spikes* two or three, cylindrical, one to two inches long, upright, on short fruit-stalks. *Scales* spear-shaped, acute, yellowish, but half the length of the capsule. *Floral-leaf*, one at the base of every spike, male as well as female upright, narrow. *Capsules* closely tiled in eight rows, inflated, globular, awn-pointed or beaked, diverging, yellowish, ending in two little teeth. *Summits* three. The sheaths of the root-leaves have the fibrous texture before-mentioned in *C. stricta*. Gooden. *Stem* one to four feet high, angles obscurely marked. Woodw. The scales, both of the barren and fertile flowers in *C. vesicaria* are acutely pointed or awned, but in this species they are less acute and not at all awned. (The fruit of this species resembles a bottle or flask, *ampulla*; that of the last a bladder, *vesica*; so that they ought never to have been confounded in character or name; to say nothing of the totally different shapes of their catkins when ripe. Sm. E.)

BEAKED OR BOTTLE SEG. (Welsh: *Hesgen chwysigenaid y ffynfain*. *C. vesicaria*. Huds. Lightf. *C. rostrata*, With. ed. ii. Sibth. E.) Bogs and marshy watery places, but not very common. Bogs of Isla, and on Benteskerny in Breadalbane. Lightfoot. Common in the north, on the edges of brooks and rivulets, as in Giggleswick Tarn, and borders of Semer Water, Wensledale. Not nearer London than Virginia Water. Curtis. Near Bungay, frequent. Mr. Woodward. Mill below Droitwich. Mr. Baker. In a pool in the Lakewood, near Pucklechurch. Rev. G. Swayne. (In Anglesey. Welsh Bot. Bulwell and Wollaton. Notts. Pentland Hills: Grev. Edin. E.) Edgbaston pool, near Birmingham. E.)

P. May—July.

54. *C. HIRTA*. Hairy; all the spikes oblong; fertile spikes far asunder, sheathed; capsules hairy.

Dicks. M. S.—(*E. Bot.* 685. E.)—*Leers* 16. 3—*H. Oz.* viii. 12. 10—*Fl. Dan.* 425. E.)

Root creeping very much. *Straw* upright, three-square, angles very acute and rough. (One to two feet high. E.) *Leaves* nearly half an inch broad, hairy, rather shorter than the straw, rough on the keel and the edges. *Barren spikes* two. *Fertile spikes* three, far asunder, the lower on long fruit-stalks. *Floral-leaves* one to each fertile spike, sheathing near half the fruit-stalk of the lower spike. *Summits* three. Gooden. The hairiness of the leaves, the scales, and the capsules, so clearly distinguish this from every other species, as to render a more minute description unnecessary.

HAIRY SEG. (Welsh: *Hesgen flewog*. E.) Meadows and pastures in wet or marshy places. A remarkable variety figured Schkuhr t. U. u. f. B. has been observed for successive years by the Rev. J. Dalton, near his house at Copgrove, Yorkshire. Bot. Guide. E.)

P. May—June.

(*C. secalina*. "Fruit deeply concave at the inner side, being so greatly compressed as to have no considerable cavity, by which character it essentially differs from *C. hirta*; the beak, moreover, being longer, narrower, rough at the edges, and somewhat membranous at the orifice."

C. stictocarpa. In habit agreeing with *C. pulla* and *globularis*, but with "fruit all over finely besprinkled with minute, brown, or reddish, depressed dots."

C. angustifolia. "Leaves linear, acute, extremely narrow, channelled, or involute."

According to Smith, are supposed to have been observed in Scotland, but seem to require confirmation. E.)

(KOBRESIA. *Barr. Fl.* Catkin with opposite scales, imbricated in two rows. *Cal.* inner scale. *Bloss* none.

Fert. Fl. Cal. Outer scale. *Bloss.* none. *Seed* one, loose.

K. CARICINA. Catkins aggregate, crowded, alternate.

E. Bot. 1410.

Roots densely tufted, crowded with the brown sheathing bases of old leaves. Stems solitary, simple, naked, round, striated, from three to five inches high; angular and rough-edged at the top. Leaves several, radical, spreading or recurved, linear, channelled, acute, rough-edged, shorter than the stem; their longish sheaths closely embracing its base, each crowned with a short, membranous stipula. Catkins four or five, alternate, brown, crowded into an ovate, upright spike, not an inch long, having a short, sheathing, brown, membranous bractea, or two, at its base.

COMPOUND-HEADED KOBRESIA. *K. caricina*. Willd. *Carex hybrida*. Schk. *Sclænus monoicus*. E. Bot. On mountains, in moist muddy spots. In the county of Durham. Mr. Dickson. On Cronkley Fell, and about Widdy Bank. In Teesdale Forest. Rev. J. Harriman.

P. Aug. Sm. Eng. Fl. E.)

TYPHA.* Catkin cylindrical: *Bloss.* none.

Barr. Fl. Cal. Three bristle-shaped leaves.

Fert. Fl. Florets on the same plant, below the barren ones.

Cal. Soft hairs: *Seed* one, on a feathery stalk.

T. LATIFOLIA. Leaves somewhat sword-shaped: spike with the barren and fertile florets close together.

Curt. 171—(E. Bot. 1455. E.)—*Kniph.* 6—*Fuchs.* 823—*J. B.* 527. 3—*H. Ox.* viii. 13. row 3. 1—*Fl. Dan.* 645—*Lonic.* i. 174. 1—*Matth.* 863—*Ger.* 42—*Trag.* 681—*Dod.* 604—*Lob. Obs.* 42. 1; *Id.* 1. 81. 1—*Ger. Em.* 46—*Lonic.* i. 173. 1. b.—*Park.* 1204. 1—*J. B.* ii. 527. 1 and 2.

(Stem six feet high; leaves three feet long, about an inch wide, convex on one side. Spike, or cylindrical club, dark brown, six inches long. Smith justly remarks, this singular plant must be familiar to the most

* (Τύφη of the ancient Greeks; from τυφός a bog or marsh; the natural situation of these plants. E.)

casual observer by its tall stems and great mace-like, brown spikes, which flower in July. E.)

GREAT CAT'S-TAIL, REED-MACE. (Irish: *Bodan duh*. Welsh: *Cynffon y gath*. *Hesgen felfedog fwyaf*. E.) Banks of rivers, fish-ponds, and in marshes. P. July.*

T. ANGUSTIFOLIA. Leaves semi-cylindrical: (equal with the culm. E.) Spike with the barren and fertile florets a little distant.

Curt. 171—(*E. Bot.* 1456. E.)—*Fl. Dan.* 815—*Tourn.* 301—*H. Ox.* viii. 13. row 3. 2—*Park.* 1204. 2.

Leaves, spike, and spike-stalk much more slender, though the plant grows as tall and as firm as *T. latifolia*. The fertile and barren spikes generally about one inch asunder. Woodw. *Leaves* sheathing the stem, semi-cylindrical below, flat and strap-shaped towards the end.

LESSER CAT'S-TAIL. (Welsh: *Cynffon y gath leiaf*. E.) Ditches and ponds. Clay pits in Norfolk and Suffolk, frequent. Mr. Woodward. Pool near Chartley House. Mr. Bagot. (Sides of the Cam below Ditton. Dr. Manningham. Crosby, near Liverpool. Dr. Bostock. In a pit on Alne Hill, near Shelfield, Warwickshire: Rufford in Purt. In Anglesey. Welsh. Bot. Loch of Lindore, Fifeshire. Mr. D. Don. Hook. Scot. Middle of Woolwich Common. P. June—July. E.)

Var. 2. When growing among rocks, and its roots confined, it becomes smaller, with spikes more numerous. Linn.

(On the authority of Dillenius, Smith thinks this variety may be considered a species: distinguished by "leaves linear, flat, half the length of the culm: barren and fertile catkins distant: culm very slender." Mr. Winch concurs in this opinion as regards specimens from Switzerland; but to discover a plant exactly answering to the above description, growing indigenously in Britain, may be no easy task. E.)

(*E. Bot.* 1457. E.)—*Lob. Adv.* 41. *Ic.* 1. 81—*J. B.* ii. 540.

(**DWARF CAT'S-TAIL.** *T. minor*. Fl. Brit. E.) Hounslow Heath. R. Syn.

SPARGANIUM.† Flowers crowded into spherical heads: barren and fertile on the same plant.

Bar. Cal. three-leaved.

Fert. Cal. three-leaved. *Fruit* a juiceless *Drupa*, superior, of one cell, and one seed.

S. RAMOSUM. Leaves triangular ♀. the base, the sides concave: fruit-stalks branched.

Curt. 312—(*E. Bot.* 744. E.)—*Kniph.* 12—*Jeers* 13. 11—*H. Ox.* viii. 13. row 2. 1—*Tourn.* 302. *C. B. Th.* 228—*Dod.* 601. 2—*Lob. Obs.* 41. 3; *Ic.* i. 80. 1—*Ger. Em.* 45. 1—*Park.* 1205. 1—*Pet.* 72. 9—*Cam. Epit.* 732—*J. B.* ii. 541. 1—*Matth.* 990—*Ger.* 41. 1.

* (The down of the *amentum* has been used to stuff cushions and mattresses. Both this and the following species are highly ornamental on the margins of ponds, and afford favourable shelter to wild fowl; but in pools of small extent they should be cautiously introduced as they increase by root more rapidly than may be desirable in such situations. The spikes matured form curious and beautiful objects, and it is said the plants will flourish even in a moist border of the garden. E.)

† (From *σπαργανον*, a band, or ribbon; descriptive of the long leaves, as in *S. natans*. E.)

(About two feet high, with a few sword-shaped leaves. E.) *Leaves* flat towards the end. Globes of barren flowers uppermost, (yellow. Fertile flowers greenish. *Germens* with the style at length forming prickly heads as large as a hazel nut. Grev. E.)

GREATER BUR-REED. (BRANCHED BUR-REED. Irish: *Seisg Madrah*. Welsh: *Cledlyflys cangenawg*. E.) *S. erectum*. Linn. Curtis having characterized and figured another species, equally erect, we have adopted his specific character and trivial name.

Ditches, marshes, and banks of rivers.

P. July.*

S. SIM'PLEX. Leaves triangular at the base, the sides flat; fruit-stalks unbranched. Curt.

Dicks. H. S.—Curt. 341—(E. Bot. 745. E.)—Fl. Dan. 932—Dod. 601. 3—Lob. Obs. 41. 4; Ic. i. 80. 2—Ger. Em. 45. 2—Park. 1206. 2—J. B. ii. 541. 2—Ger. 41. 2—Pet. 72. 10—Park. 1205. 2. lowermost corner—H. Ox. viii. 13. row 2. 2.

Grows upright like the preceding, but is a much smaller plant, though the globes of flowers are larger.

(UNBRANCHED BUR-REED. Welsh: *Cledlyflys undw' syth*. E.) Marshy places, and sides of pools, particularly such as are found on heaths, and have been old gravel pits. P. July.

S. NA'TANS. Leaves prostrate, strap-shaped, flat.

Dicks. H. S.—E. Bot. 273—Fl. Dan. 260—Pet. 72. 11.

Flowering stem very slender, not rising more than six inches above the water; undivided; supporting a few balls of sessile flowers, and those not larger than a pea. *Leaves* flat, floating on the water to a considerable length: Woodw. (somewhat pellucid. E.) Both before the stem shoots up, and after the flowering, the leaves, which much resemble grass, float on the surface of the water like those of *Festuca fluitans*. The terminal ball of flowers is entirely barren, the lower ones are fertile. *Style* short. *Summit* slanting. (*Stigma* solitary, very short, ovate, peltate, oblique, on a short, thick *style*. The form of the *stigma* clearly distinguishes this species. Sm. E.)

FLOATING BUR-REED. *S. simplex nutans* β, Huds. Pools, lakes, and slow rivers about Norwich. Llanberris; and in Yorkshire and Westmoreland. St. Faith's Newton Bogs. Mr. Pitchford. Stagnant waters in the Moss of Restenat, Angus-shire. Mr. Brown. (Burwell Fens, Cambridgeshire. Rev. Mr. Hemsted. Near Manchester. Dr. Hull. Fl. Brit. Cors y bol, Cors ddygai, &c. Anglesey. Welsh Bot. E.) P. July.

DIGYNIA.

PHALARIS.† *Cal.* two-valved, one-flowered, keeled, longer than, and inclosing the blossom: *Nectary* two-leaved.

* (Curtis observes that the larvæ of a *Tenthredo* and of *Phalana Festuce* prey upon the leaves; and that the rare insect, *Sphex fissipes*, may sometimes be detected in a web under the leaves. E.)

† (φάλας, shining; characteristic of the seeds. E.)

P. CANARIENSIS. Panicle nearly egg-shaped, spike-like ; husks keeled, hairy : nectaries two : calyx double.

Ludw. 117—*Schreb.* 10. 2—(*E. Bot.* 1310. E.)—*Matth.* 919—*Trag.* 669—*Ger.* 80. 1—*C. B. Th.* 534—*Dod.* 510—*Lob. Obs.* 26. 1—*Ger. Em.* 86—*Park* 1163. 1—*J. B.* ii. 442. 2—*H. Or.* viii. 3. row 3. 1—*Spike, Mont.* 44—*Fructif. Leers* 7. 3.

(*Seeds* egg-shaped, compressed, shining. *Fl. Brit. E.*) *Valves* of the calyx with two green ribs on each side, and much larger than the blossom. Within these are two small, white, membranous valves, not more than half the length of the blossom. *Bloss.* the larger valve hairy, the other only so along its back. *Nectary* two, fleshy, concave, pear-shaped substances on the outside the base of the blossom. (One to two feet high, somewhat glaucous, brown at the joints. E.)

BIRD CANARY GRASS. (Welsh: *Yfr-wellt amaethawl*. E.) Road sides and uncultivated ground. New's Wood, adjoining to Malvern. Mr. Ballard. Ballast hills of Tyne and Wear. *Winch. Guide.* On the borders of fields behind St. Clement's, near the Parks, Oxford. Mr. Baxter, in *Purt.* Road side between Tyfry and Penmynydd, Anglesey. *Welsh. Bot. E.* A. June—Sept.*

P. PHLEOTIDES. Panicle cylindrical, spike-like, smooth ; here and there viviparous.

(*E. Bot.* 459. E.)—*Fl. Dan.* 531—*Viviparous floret, Scheuch.* 2. 5. C.

- * *Stem* pale, divisible into lobes. So exactly resembling some of the *Phleums*, that it may be easily mistaken for one of that genus ; but the spike when examined and pressed with the fingers, separates, and proves to be a panicle ; and the *Husks* are not notched at the end. *Flowers* different from those of the *Phleum*. Intermediate between *Phalaris*, *Phleum*, and *Alopecurus*. *Linn.* A stiff awn-like thread rises from the base of the inner valve, one-third of its length, analogous to that of *Arundo arenaria*. *St.* Never found any of the florets viviparous. *Woodw.* From ten to fifteen inches high. *Panicle* from near two to three and a half inches long, thick as a goose quill. (Readily known by the *stems* being of a shining purple where naked. *Glumes* purplish. *Radical leaves* continue in tufts through the winter. *Sm. E.*)

CAT'S-TAIL CANARY GRASS. (*P. phleoides*. *Linn.* *Willd.* *Sm. Fl. Brit.* *Pleum. Bochneri.* *Schrad.* *Sm. Eng. Fl. E.*) High, dry, and sandy soil, rare. First discovered in Great Britain by Mr. Woodward and Mr. Crowe, Near Swaffham, Norfolk, in 1780. (Barrington Hill, near Hildersham, Cambridgeshire, in great abundance. *Relhan.* On Chippenham Park wall, Cambridgeshire. *Rev. J. Hemsted. E.*)

P. June—July.†

(**P. ARUNDINACEA.** Panicle upright, with spreading branches : flowers crowded, leaning one way. E. Bot.

* It is often cultivated for the seeds, which are found to be the best food for the Canary, and other small birds. It nourishes the *Coccus phalaridis*, not properly a native, but is become naturalized, though originally from the Canary islands. (In the Isle of Thanet the widely extended crops of this elegant grass make a beautiful appearance in the month of July and August. It is a great impoverisher of the soil, and not suitable to general purposes. E.)

† A grass of insignificant produce, and has been proved unworthy of cultivation. E.)

E. Bot. 402. *E.*)—*Fl. Dan.* 259—*H. Ox.* viii. 6. 41—*Park.* 1273. 2—*C. B. Th.* 37 and 92—*Leers* 7. 3—*Mont.* 59.

(*Stems* two to five feet high, erect, strong, reedy, smooth, and leafy, with several joints. *Leaves* spear-shaped, striated, pointed, smooth, more or less glaucous, with long, ribbed, scarcely swelling sheaths. *Stipule* short, bluntish. *Calyx* glumes equal, keeled, ribbed. *Inner corolla* shorter than the calyx, downy; at length cartilaginous, and enfolding the seed; *outer* of two very minute, linear, gibbous, hard valves, each bearing a tuft of hair exceeding their own length. Schrader rightly observes that the hardened permanent corolla proves this a *Phalaris*, and that what have been taken for mere tufts of hair (whence referred to *Arundo*), are really outer petals. These parts are more fully represented in *E. Bot.* t. 2160, fig. 2. *E.*) *Stem* and *leaves* smooth, the latter half an inch or more in breadth. *Panicle* five to eight inches long, one to two in breadth, stiff and strong; varying in colour from almost white to pale green in the shade, and in the sun to rich shades of purple and yellow, with large dark red anthers.

(*REED CANARY GRASS. Calamagrostis variegata.* With. *Ed.* 4. *Arundo colorata.* *Fl. Brit.* *Ait. Hort. Kew.* *Ed.* 2. *P. arundinacea.* *Linn. Sm. Eng. Fl. Hook. Purt. E.*) Banks of rivers and ponds, not uncommon. *P. July.*

Var. 2. *Leaves* glaucous green. *R. Syn.* p. 400. n. 1.

Near Lanperis. (By the sides of Llynian Llanfihangel, Anglesey. *Welsh Bot. E.*)

Var. 3. *Leaves* striped.

This beautiful variety is often cultivated in gardens under the name of *Painted Lady-grass*, or *Ribbon-grass*. The stripes are generally green and white, but sometimes have a purplish cast. It is figured in *Ger. Ein.* 26. 2. *H. Ox.* viii. 6. 43. *Ger.* 24. *J. B.* ii. 476. 2. It has not been found wild with us; (unless, as Mr. Relhan has announced, near Cambridge. *E.*)*

PANICUM.† *Cal.* two-valved, two-flowered; one floret perfect, the other barren or neutral. (*Seed* enveloped in the persistent blossom. *E.*)

P. VERTICILLATUM. Spike cylindrical, (with whorled branches. *E.*) rough; partial involucre with two bristles and one floret.

Dicks. H. S.—Curt.—(E. Bot. 874. *E.)—H. Ox.* viii. 4. 11—*Ger.* 14—*C. B. Th.* 139—*Park.* 1177. 2—*J. B.* ii. 469. 1—*Ger. Em.* 15. 1.

Greatly resembling *P. viride*, but the bunches of the spike longer, three or four together, pointing downwards on one side. *Flowers* green. *Pistils* purple. One or two rough bristles to each flower, and longer than the flower. Little fruit-stalks, after the falling off of the flowers, terminated by a truncated, hollow, white cup. *Spike-stalk* cloven, with three or four angles. *Straws* smooth, spreading, two feet high. *Leaves* naked. *Linn.* *Spike* two and a half to four inches long, and near half an inch

* (Mr. Hallet, of Axminster, finds this variety affords excellent food for cattle. It produces an earlier crop than most other grasses, and may be cut three or four times during the summer. *Month. Mag.* v. 21. p. 343. Mr. Sinclair considers it suitable to tenacious, clayey soils, but prefers the *Festuca elatior*. *E.*)

† (The diminutive of *panus*, bread; more than one species proving farinaceous. *E.*)

broad. (The two bristles of the involucre are very rough with little sharp teeth *pointing backwards*, by which curious mark this is always, in however dwarf a state, clearly distinguishable from *P. viride*. Curt. E.)

ROUGH PANICK GRASS. Battersea fields. Curtis. (In a field near St. Giles's gate, Norwich. Fl. Brit. Beyond the Neat Houses by the Thames side going from the Horse Ferry above Westminster to Chelsea, and in corn-fields between Putney and Roehampton. Ray. Sunderland Ballast hills. Mr. Weighell. Winch Guide. E.) A. June—July.*

P. VIRIDE. Spike cylindrical (continuous, E.) ; partial involucrum with three bristles and one floret.

Curt.—(E. Bot. 875. E.)—Ger. Em. 17. 3—Park. 1154. 2 and 3—Fl. Dan. 854—Ger. 20. 8—C. B. Th. 138—H. Ox. viii. 2. 10—J. B. ii. 431. 1—Spike ; Leers 2. 2—Fructif. Scheuch. 2. 2.

Spike one to two and a half inches long, three-eighths broad, green, or with a purplish cast from the bristles being more or less coloured. (Smaller than the above, and not easily distinguished from it. Bristles of the involucre about six, rough with *erect teeth*, not reflexed as in *P. verticillatum*, (as pointed out by Curtis). Involucra greatly exceeding the flowers in length. E.)

GREEN PANICK GRASS. Sandy fields. Corn fields, Ditchingham, Norfolk. Mr. Woodward. Many places about Norwich. Sir J. E. Smith ; (and Battersea fields. Near the Neat Houses, Chelsea. Martyn. Ballast hills of the Tyne and Wear. Mr. Winch. E.) A. July.†

P. CRUS-GAL'LI. Spikes alternate or in pairs : little spikes sub-divided : husks awned, and rough with strong hairs : spike-stalk with five angles.

Leaves spear-shaped, harsh, naked, without stipulas (the one represented in E. Bot. an error. Stems often two feet high ; stout, leafy. Sm. E.)

Var. 1. Awns none. Curt.

Curt.—(E. Bot. 876. E.)—Matth. 407—H. Ox. viii. 4. row 1. 15—Dod. 559. 2—Lob. Obs. 25. 2—Ger. Em. 85. 4—Park. 1154. 1—Ger. 79. 5—C. B. Th. 136.

Var. 2. Awns much longer than the calyx.

Ger. 15. 1—C. B. Th. 137—J. B. ii. 443. 2—Ger. Em. 16. 1—Park. 1154. 4—Panicum, &c. Leers 2. 3—Fructif. Scheuch. 2. 2. F.

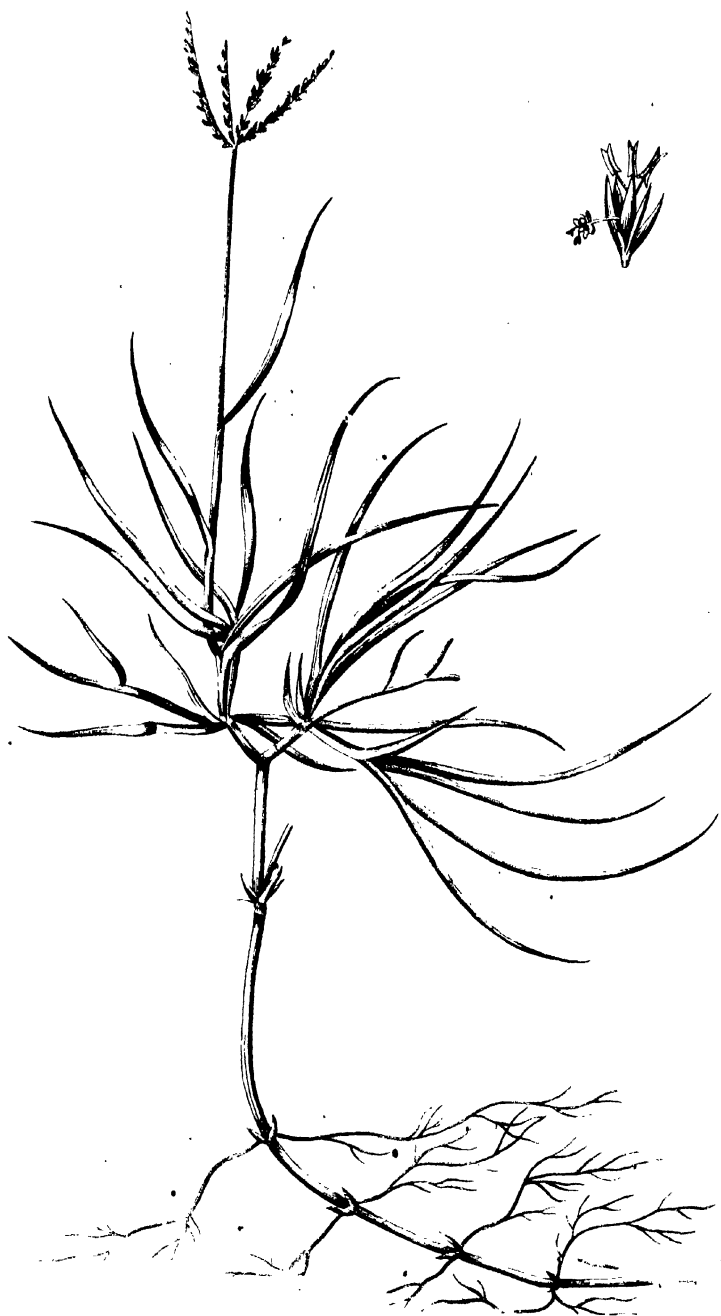
LOOSE PANICK GRASS. Wet corn-fields, rare. About Battersea. Near Martha's Chapel, by Guildford. Hudson. Between Deptford and Greenwich. Near Petersfield, by the rivulet, Hants. Ray. A. Aug.‡

P. SANGUINALIS. Spikes digitate, knotty on the inside of the base : flowers in pairs, without awns : sheath of the leaves dotted, or verrucose.

* (In Japan the flour of this plant is made into cakes. E.)

† (Of little value to the agriculturist, but not sufficiently common to be dreaded as a weed. Small birds are fond of the seeds. Hort. Gram. E.)

‡ (This singular grass, whose turgid appearance prevents its being confounded with any other British species, produces abundance of rather large seeds, acceptable to small birds. Though not hitherto cultivated, Salisbury says it stands dry weather particularly well, will attain the height of four feet, and is not disagreeable to cattle. E.)



Curt. 212—(*E. Bot.* 849. *E.*)—*Schreb.* 16—*H. Or.* viii. 3. row 1. 2—*Buxb.* v. 65—*Clus.* ii. 217. 2—*Lob. Obs.* 13. 1—*Ger. Em.* 27. 2—*Park.* 1178. 1—*Ger.* 25. 2—*C. B. Th.* 114—*J. B.* ii. 444. 1—*Fl. Dan.* 388—*Spikes*, &c. *Leers* 2. 6—*Scheuch.* 2. 11. *G. H.*

(*Stems* numerous, bent, and decumbent at the base, then ascending, about a foot long, jointed, leafy, striated, smooth. *Leaves* broad, striated, wavy at the edges, besprinkled with little warts, many of which bear bristly hairs. *Spikes* from three to eight, alternate, spreading, crowded at the top of the stem, many-flowered. *Bloss.* dark, purplish. *Summits*, and often *Anthems* violet-coloured. *Sm. E.*)

COCK'S-FOOT PANICK GRASS. (*P. sanguinalis*. *Linm.* With. *Curt.* Willd. *Sm. Fl. Brit.* Hook. *Schreb.* Ehrh. *Digitaria sanguinalis*. Hall. *Juss.* *Sm. Eng. Fl. E.*) Corn-fields near Battersea; and Martha's Chapel, Guildford. Hudson. At Witchingham Norfolk. Mr. Woodward; (not found there at present. Smith. Near Henham, between Beccles and Saxmundham. Lightfoot. Sunderland Ballast Hills. Mr. Weighell. *Winch Guide.* *E.*) A. July—Aug.*

(CYNODON.† *Cal.* of two spear-shaped, acute, spreading, equal valves, shorter than the blossom. *Bloss.* of two compressed very unequal valves. *Seed* enveloped in the persistent indurated blossom.

C. DACTYLON. *Spikes* four or five, digitate, expanding, villous at the base: flowers solitary: roots with creeping runners.

PLATE XXI.—*Dicks.* II. *S.*—(*Hort. Gram.* *E. Bot.* 850. *E.*)—*Clus.* ii. 217—*Lob. Obs.* 12. 1—*Ger. Em.* 28. 3—*Park.* 1179. 5—*C. B. Th.* 112. 113—*H. Or.* viii. 3. row 2. 4—*Barr.* 753. 1—*H. Or. ib.* 6—*Spikes*, *Mont.* 99—*Scheuch.* 2. 11. 1. (*Jones's Works.* v. 5. 8vo. *E.*)

This species seems first to have been found by Mr. Newton, as recorded in Ray. *Syn.* 399, who justly rejects the *syn.* of Bauh. *Pin.* 7, which Linnaeus probably copied from Scheuchzer or the older writers, and Hudson from him, overlooking the rejection of it by Ray. Mr. Starkhouse supplied me with specimens, and the drawing from which the annexed plate has been engraven. The same gentleman also favoured me with the following remarks on its structure, which agree well with those of Scheuchzer.—*Root* greatly creeping through the loose sand, with strong fibres at the knots. *Stem* rarely exceeding six inches in height. *Leaves* sheathing, the sheath parting from the straw when old, glaucous, hairy or pubescent throughout. *Spikes* four, diverging, dark purple, changing to chestnut colour, near two inches long, not more hairy than the other parts of the plant. *Florets* all on one side of the spike-stalk, awnless. (*Stems* creeping to a considerable extent, matted, very smooth. *Flowers* purplish, ranged in two close alternate rows. The *corolla* is longer than the calyx, very much compressed, opposite with respect to the latter. *Sm. E.*)

* All the stems which lie near the ground take root, and by this means, though an annual and short-lived plant, it increases and spreads very wide. Miss Jennings. (It yields abundance of seed, of which small birds are very fond. According to Schreber it is cultivated in Germany for the seed, which when prepared with much trouble by a peculiar process, and boiled with milk or wine, form a palatable food, used whole in the manner of sago. Sinclair states the nutritive powers of the herbage to be very inconsiderable. *E.*)

† (Synonymous with the descriptive English name. *E.*)

VOL. II.

(CREEPING DOG'S-TOOTH GRASS. *C. dactylon*. Br. Sm. Eng. Fl. *Panicum dactylon*. Linn. *Digitaria stolonifera*. Schrad. *Agrostis linearis*. Koenig. Retz. Willd. E.) Sandy sea-shore. Between Penzance and Market-jeu. Ray. And lately in the same place by Mr. Stackhouse. P. July.*

PHLEUM.† *Cal.* two valved, sessile, strap-shaped, truncated, ending in two dagger points, inclosing the blossom. (*Seed* loose. E.)

(**P. ARENARIUM.** Spike slightly paniced, egg-spear-shaped, obtuse: calyx-glumes spear-shaped, ciliated at the back, thrice the length of the abrupt, crenated blossom.

Hook. Fl. Lond.—Fl. Dan. 915—E. Bot. 222—Pluk. 33. 8—Mont. 74—Spike only.

Calyx valves furnished with two dagger-points, which assimilate it with the genus *Phleum*. *Straws* branched at the bottom, several from one root, ascending four or five inches high; leafy below, naked and purplish above.

SEA CAT'S-TAIL GRASS. Welsh: *Pefr-wellt-y-tywod*. *P. arenarium*. Linn. Hook. Sm. Eng. Fl. Grev. *Phalaris arenaria*. Huds. With. Ed. 6. Sm. Fl. Brit. Willd. On sandy shores not unfrequent. Yarmouth. Mr. Woodward. Newborough Sands, Anglesey. Mr. Griffith. North shore, near Liverpool. Dr. Bostock. North shore at Poole; at Swanage, and Weymouth. Pulteney. Near Burnt Island. Arnott, in Grev. Edin. On the Den at Teignmouth. E.) A. July—Aug.

P. ASPERUM. Panicle cylindrical, spike-like; stems branched; (calyx wedge-shaped, swelling upward, pointed, rough: keel naked.

Jacq. Col. 110—E. Bot. 1077.

Whole plant bright green. Root of several strong, whorled fibres. Stem eight to eighteen inches high, very smooth, leafy. Leaves roughish, pointed, erect, with slightly swelling sheaths. *Stipula* oblong, generally torn. *Panicles* terminal, solitary, erect, two or three inches long, very dense, rough, when bent on one side proving to be much branched and subdivided, consisting of innumerable little tumid flowers. Bloss. of two

* (In the climate of Great Britain, (as appears from the experiments of Mr. Sinclair), the produce and nutritive powers of this grass are insignificant, compared to the importance attached to them in the East Indies: or rather we should be inclined to infer that in a continent dried as that of Hindostan, producing but little herbage for cattle, compared with the emerald Isles of the Ocean, every addition to the natural green food must be doubly valuable. One of the most interesting circumstances connected with the history of *C. dactylon* is its having been clearly ascertained to be the *Darna* or *Dub-grass* of the Hindoos; respecting which Sir W. Jones observes, "Its flowers, in their perfect state, are among the loveliest objects in the vegetable world, and appear, through a lens, like minute rubies and emeralds, in constant motion from the least breath of air. It is the sweetest and most nutritious pasture for cattle; and its usefulness, added to its beauty, induced the Hindus, in their earliest ages, to believe that it was the mansion of a benevolent nymph. Even the Veda celebrates it, as in the following text of the Attharvama: 'May *Darna*, which rose from the water of life, which has a hundred roots and a hundred stems, efface a hundred of my sins, and prolong my existence on earth for a hundred years!' The longer quotations introduced in Hort. Gram. we apprehend belong to another plant." Vid. Sir W. Jones's Works, v. 8vo. Ed. and Linn. Tr. vii. E.)

† (*dactylon*, to abound; from its seed? E.)

unequal, oval, ribbed, somewhat downy glumes. *Stam.* and *styles* capillary. *Seed* cylindrical, minute loose. Sm. E.)

ROUGH CAT'S-TAIL GRASS. *P. asperum*. Jacq. Villars. Schrad. Sm. Eng. Fl. *P. paniculatum*. Huds. With. Sm. Fl. Brit. *Phalaris aspera*. Retz. Willd. A very rare plant, hitherto involved in much obscurity. Meadows below King's Weston, near Bristol. Newmarket Heath. Bournbridge, Cambridgeshire. Mr. Crowe. (Sunderland Ballast Hills. Mr. Weighell. On the wall of Rose Lane, Oxford. Sibthorpe. Badminton Park, Gloucestershire, near the lodge. Herb. Banks. E.)

A. Aug.

P. PRATEN'SE. Spike cylindrical, very long: calyx abrupt, fringed at the back, and longer than its awns.

E. Bot. 1056.

(*Stem* two to four inches high, knotty; in the varieties partly decumbent. *Leaves* flat, roughish, with long, close, striated sheaths; and a small blunt stipula. *Cluster* erect, from two to six inches long. *Awns* straight, short, rough. Sm. E.)

Var. 1. Major. Larger.

Gram. Pasc.—(*Hort. Gram. E.*)—Schreb. 14. 1. 2—C. B. Pr. 10. Th. 49. 1—H. Ox. viii. 4. row 3. 1 and 2—J. B. ii. 472. 2—Park. 1170. 1—Spike, &c. Leers 3. 1—Mus. Rust. v. 1. 1—Mont. 52.

Root nearly bulbous. *Straw* upright. *Spike* from four to seven inches long.

COMMON TIMOTHY GRASS. HERD GRASS, in America. Ray Syn. 398. 1. (Welsh: Rhon-wellt y gath cyffredin. E.) Pastures common. P. July.*

Var. 2. Minor. Smaller.

(*Hort. Gram. E.*)—Schreb. 14. 3. 4 and 5—Fl. Dan. 380—Barr. 53—Pet. ii. Gram. Ital. 4. 1—H. Ox. viii. 4. row 3. 3—Ger. 10. 2—C. B. Th. 52—Park. 1170. 3—J. B. ii. 472. 3—Dod. 562—Lob. Obs. 10. 1—Ger. Em. 12, uppermost fig.—Park. 1170. 2—Spike, &c. Leers 3. 2.

Smaller than Var. 1 in all its parts. *Root* more like a bulb, and sheathed with brown skin. *Straw* ascending. *Spike* from three fourths of an inch to two inches long. Leers tells us that being transplanted into rich soil it became the year following the first variety. *Florets* sometimes with four styles. Ray Syn. 398. 2. Barren pastures and road sides, common.

P. July—August.†

Var. 3. Bulbous.

Bar. 22. 1—Pet. ii. Gram. Ital. 4. 2—H. Ox. viii. row 2. 1—Barr. 22. 2.

* Cows, horses, and goats eat it. Swine refuse it.—Vid. account of it in Mus. Rust.—Dr. Pulteney says, that notwithstanding the character which this grass acquired from Le Rocque's recommendation, sheep dislike it; neither are cows or horses fond of it. But Leers asserts, it affords an excellent pasture for horses.—A hard coarse grass, of little value for cattle. Mr. Swayne. (This grass is very deficient in the produce of latter-math, and is slow in growth after being cropped; defects not compensated by the nutritiveness of the earlier crop. Hort. Gram. Dr. Walker states, it acquired its name from Timothy Hanson, a cultivator of it in North America, where it was held in some estimation. E.)

† (Later in the spring produce and less nutritious than Var. *maj.* to which it is inferior in a proportion of 8 to 25. Hort. Gram. E.)

Root bulbous, the straw not upright, but ascending, and covered by the sheaths of the leaves. *Leaves* pointing in two opposite directions, smooth, except at the edges. Linn. *Bulbs* on the straw three or four, half an inch asunder, two spear-shaped scales to each bulbous joint. *Straw* not only ascending, but geniculate. *Leaves* narrower than in the preceding species. Ray Syn. 398. 3. ("Whenever *P. pratense* is situated in a fluctuating soil, it acquires a *bulb*, by which its vital powers are supported while the fibrous roots are deprived of their usual supplies. In this state it becomes the *nodosum* of authors, but on being removed to a thoroughly wet soil, it resumes the entirely fibrous root and luxuriant growth of *pratense*." E.)

BULBOUS-JOINTED CAT'S-TAIL GRASS. *P. nodosum*. Linn. With. Ed. 6. *P. pratense* γ. Eng. Fl. E.) On the top of a wall about six miles from Bath, on the Warminster road. Mr. Swayne. (Near to a spring in Woburn Park. Sinclair. E.) P. June.*

P. ALPINUM. Spike egg-cylindrical: (awns the length of the glumes.

E. Bot. 519. E.)—*Scheuch. Pr.* 3. 1—*Fl. Dan.* 213.

Spike about one inch long, one-third of an inch broad, dark-coloured, purplish, especially towards the base. (*Awns* of the calyx as long as the husks; but in *P. pratense* much shorter. *Root* tuberous. *Stem* six to twelve inches high. E.)

ALPINE CAT'S-TAIL GRASS. Said to be found on Craigneulic, above Killin. Lightfoot. Mountains near Garway Moor. Dickson. (On Lochan y Guir abundant, and more sparingly on Ben Lawers. Mr. Brown. E.)

P. Aug.

(**P. MICHELII.** Panicle nearly cylindrical, spike-like: glumes of the calyx spear-shaped, somewhat down-pointed, strongly fringed, and hairy.

E. Bot. 2265.

Stems a foot or more in height, slender, smooth, erect, leafy more than half way up. *Leaves* flat, pointed, rough-edged; their sheaths smooth, the upper ones especially lax or inflated. *Stipula* short, blunt. *Valves* of the blossom fringed, unequal, blunt, shorter than the calyx. *Stigmus* slender, loosely feathered.

MICHELIIAN CAT'S-TAIL GRASS. *P. Michellii*. Allion. Schrad. Discovered by Mr. G. Dou, on rocky parts of the mountain of Clova, Angusshire. E. Bot. P. July. E.)

ALOPECURUS.† (*Cal.* two-valved: *Bloss.* one valve, simple at the summit, awned at the base: *Styles* combined E.)

A. PRATEN SIS. Spiked straw upright: calyx hairy: blossom awned.

Gram. Pasc.—Eurt. 296—(*Hort. Gram.*—*E. Bot.* 759. E.)—*Schreb.* 19. 1—*Mus. Rust.* iv. 2. 9—*Stillingf.* 2. out of blossom—*Ger. Em.* 11. 1—*Park.* 1161. 3—*Spike*, &c. *Leaves* 2 4.

* (A scarce grass; of very inferior quality. Hort. Gram. E.)

† (Ἀλωπεξ, a fox, and ὄψα, a tail; in allusion to the form of the spike. E.)

The *awn* is twice the length of the calyx, and geniculate. (Such is generally, though not invariably, the case in British specimens. Experience proves, in other instances as well as the present, that the dorsal awn is not always to be relied on. E.) *Spike* one to one and a half inch long, near half an inch broad. (*Stem* from one to three feet high. *Leaves* slightly glaucous; upper ones somewhat rough. *Anthems* prominent, yellow. *Summit* feathery. E.)

MEADOW FOX-TAIL GRASS. (Welsh: *Rhon-wellt y cadnaw y weirglawdd*. E.) Meadows, very common. In wet seasons, and under trees, this plant has been found viviparous. E.) P. May—June.*

(A. ALPINUS. Stem upright, smooth: spike egg-shaped: glumes of the calyx downy, awnless, nearly as long as the awns of the blossom.

E. Bot. t. 126.

Root creeping, blackish. *Stem* about a foot high, bent at the lowest joint, thence erect, simple, leafy, smooth in every part. *Radical leaves* narrow; those on the stem broader, short, flat, sharp-pointed, smooth, with long and slightly inflated sheaths, crowned by very short stipulæ. *Spike* terminal, erect, blunt, scarcely an inch long. *Flowers* egg-shaped. *Calyx-glumes* united at their base, somewhat abrupt at the point, purplish, clothed with soft white hairs. *Blossom* of one naked glume, with an awn from its lower part, which scarcely (if at all) exceeds the calyx in length. E. Bot.

ALPINE FOX-TAIL GRASS. (So very rare a plant, that no stations but the following are as yet known in the world. Hooker. On the mountains of Scotland, particularly those about Loch Na-gore, Aberdeenshire, and Clova, Angus-shire. Mr. G. Don. Ben Lawers. Mr. Brown.

P. July. E.)

A. AGRESTIS. Spiked straw upright: calyx not hairy, its husks united at the base.

Curt —Schreb. 19. 2—(Hort. Gram.—E. Bot. 848—E.)—Fl. Dan. 697—Ger. Em. 11. 2—Burr. 699. 2—Bush. v. 40. 1—J. B. ii. 472. 1—Ger. 9. 4—C. B. Th. 53. 5—Park. 1169. 8—Spike, &c. Leers 2. 5—Mont. 54—Scheuch. 2. 6. A. B.

* (This is the best grass to sow in low meadow grounds, or in boggy places which have been drained. Sheep, horses, and goats eat it. Cows and swine are not fond of it. Linn.; but Dr. Pulteney says, this is the most grateful of all grasses to cattle. *A. pratensis* is a grass very promising for cultivation. Lewis Majendie, Esq., Hedingham Castle, Norfolk, has cultivated it on a considerable scale, and finds it to be an excellent grass. There is, however, one circumstance which will be a great impediment to its general cultivation, viz. the depredations of the larvæ of a species of *Musea*, which devour the seed so much, that in many spikes scarcely one will be found perfect. These larvæ are the prey of *Cimex campestris*, whose rostrum seems peculiarly formed for searching the husks of the grasses. Mr. S. Swayne. (Salisbury observes that it has the advantage of being fit for the scythe so early as the middle of May. Sinclair proves that the produce of this grass is considerably greater on a clayey loam, than on a siliceous sandy soil. Under the best management it does not attain to its fullest productive powers from seed till four years, hence it is not suitable to the regular alternate husbandry. It thrives well under irrigation, and is strictly permanent. In many rich natural pastures it constitutes the principal grass. Its merits, whether with regard to early growth, produce, nutritive qualities, or permanency, prove it to be one of the best grasses for permanent pasture. The evil of which Mr. Swayne complains may be almost entirely obviated by suffering the first culms of the season to carry the seed. Hort. Gram. E.)

(*Awn* three or four times the length of the blossom. *Stems* one and a half to two feet high. E.) *Spike* two to four inches long, hardly one fourth of an inch broad, of a kind of lead colour, (often purplish; tapering at each end: E.) *Calyx* one leaf, divided rather more than half way down.

Var. 2. *Spikes* shorter. *Awns* bowed back. Ray Syn. p. 397. n. 2. (*A. agrestis* β. Fl. Brit. E.)

SLENDER FOX-TAIL GRASS. Corn fields and road sides. Pastures in the Isle of Wight, very common. A. July.*

A. BULBO'SUS. Straw upright; spike cylindrical; root bulbous.

(E. Bot. 1249. E.)—Barr. 699. 1—Ray 20. 2—Mont. 54.

Root not creeping nor sending off suckers. *Straw* never striking root at the joints, never knee-jointed. *Spike* dark glaucous green, but not so black as in the bulbous variety of *A. geniculatus*. *Anthers* deep glaucous blue, in the variety of *A. geniculatus* the colour of rusty iron. Woodw. (*Blossom* of one obtuse notched glume, with a bent awn from its back, twice as long as the calyx. E. Bot. E.) *Spike* one to one inch and a half long. *Awns* barely twice the length of the calyx; little fruit-stalks branched. (No species can be more invariably distinct. Sm. E.)

BULBOUS FOX-TAIL GRASS. *A. bulbosus*. Linn. In wet salt marshes, rare; always growing in water. In salt marsh near Yarmouth. Mr. Woodward. (Marshes near Weymouth. Mr. Lambert. In Cardiff marshes, and near Aust Passage. Rev. J. Lightfoot. E.)

P. June—July.†

A. GENICULATUS. Spiked straw geniculate.

Var. 1. *Awns* twice as long as the blossom: root fibrous.

Curt. 339—Fl. Dan. 861—(E. Bot. 1250. E.)—H. Ox. viii. 4. row 2. 15—Lecers 2. 7—Scheuch. 2. 6. C, D, E.

(*Florlets* smaller than in any other species. Hook. *Leaves* much broader and shorter than in the last. *Stems* twelve to eighteen inches long; floating or prostrate, ascending towards the ends. *Roots* of long fibres. E.) Upper leaves one to one inch and a half above the sheathing part. *Spikes* one inch and half long. *Awns* full twice as long as the calyx. *Anthers* purplish, changing to dull yellow.

(FLOATING FOX-TAIL GRASS. GENICULATE FOX-TAIL GRASS. Welsh: *Rhon-wellt y cadnaw cymmalog*. E.) In meadows common, and floating widely on the surface of shallow ditches and ponds. In dry situations, as on walls, &c. the leaves and stem are greatly diminished in size, and the roots become bulbous, with excessively long fibres. This transmutation has sometimes occasioned *A. geniculatus* to be mistaken for the real

* A very troublesome weed in many places amongst wheat, and execrated by the farmers under the name of *Black Bent*; Mr. Swayne; or *Spear-grass*. (It is most prevalent in beggared soils, and will bear to be repeatedly cut down in the same season. The best remedy is careful husbandry, and bringing the land into good heart. (The herbage is comparatively of no value, and appears to be left untouched by every description of cattle. A large portion of the seeds of this plant are yearly destroyed by a minute orange-coloured maggot. The seeds are acceptable also to pheasants, partridges, and smaller birds. E.)

† (This plant seems by nature a meadow grass; and Dr. Anderson suggests that, as its matted roots give an unusual firmness to the surface of the ground; it may be serviceable to prevent soft and moist soils from being poached by the feet of cattle. E.)

bulbosus. For a similar instance of a fibrous root being converted into an egg-shaped bulb, see *Phleum pratense*. E.) P. June.*

Var. 2. Awns longer than the blossom; root bulbous; sheaths wider than the thickness of the straw. Awns barely twice the length of the calyx. Anthers purple, changing to brown yellow.

On a bog at the source of the Yar, Fresh Water Gate, Isle of Wight. May.

Var. 3. Awns more than twice the length of the blossom. Root bulbous. In flat meadows at Highbridge, in the parish of Huntspill, Somersetshire. June.

(A. FULVUS. Stem ascending, bent at the joints; spike compound, cylindrical; glumes obtuse, hairy; awn the length of the calyx; anthers roundish.

E. Bot. 1467.

Awns very fine and soft, not longer than the blossom. Root fibrous.

Tab. Hist. 1. p. 512—C. B. Th. 42—Ger. Em. 14. 2—Park. 1275. 7.

From the fineness and shortness of the awns this has the appearance of being awnless. Leaves broader than in any of the preceding, sheathing the straw quite to the top; the sheath much wider than the thickness of the straw, and widest upwards. Spike-like panicle cylindrical, two inches long, a quarter of an inch broad, pale green. Anthers fine orange, so that the flowering plant may be distinguished at some distance. (Dr. Withering long ago suspected this to be a distinct species, in which opinion Sir J. E. Smith has recently concurred, adding that the anthers are totally different in form from those of *A. geniculatus*, being not half so long, nor of a linear shape, but very short, thick, and almost round, deeply cloven at each end, bursting by an oval orifice at each side, and when old turning quite white. The plant is larger than *A. geniculatus*, and the spike more compound. Prof. Hooker, and some foreign Botanists, still consider it only a var. of the preceding species.

ORANGE-SPIKED FOX-TAIL GRASS. *A. geniculatus*, var. 4. With. Ed. 4. Floats in water. Swainsthorpe, near Norwich. Mr. Stone. E.) In a marshy place by the stews in Edgbaston Park. (Bridge near Audrey Causeway, Cambridgeshire. Rev. R. Relhan. E.)

P. August—September.

(KNAP'PIA† Cal. two-valved: Bloss. two unequal, very hairy, awnless valves.

K. AGROSTIDE'.

Hook. Fl. Lond. 61—E. Bot. 1127—H. Or. viii. 2. row 3. 10—C. B. Th. 26—J. B. ñ. 465. 4—Scheuch. 1. 7. 1.

Stems one to three inches high, erect, simple, slender, smooth, triangular, naked, except at the very bottom, where they are invested with the mem-

* (Not eaten with relish by either cows, horses, or sheep. Its nutritive power not considerable. Sinclair. Salisbury thinks it might prove valuable in water meadows; but Curtis assures us that it cannot be recommended as a profitable grass, even in such situations. F.)

† (Thus called after the celebrated author and delineator in this department of Botany, John Leonard Knapp, F.L.S. E.)

branous *sheaths* of a few short, obtuse, channelled *leaves*. *Stipula* membranous, bluntish, cloven, but not deeply divided. *Spikes* solitary, simple, erect, of from six to ten *flowers*, mostly sessile, alternate, erect, two to three of the lowermost only more or less stalked; their *common stalk* zigzag, slender, smooth, angular, but not excavated as in the truly spiked grasses. *Fl.* like the top of the stem, purplish. *Cor.* white and feathery. Eng. Fl.

LEAST BENT GRASS. EARLY KNAPP. (Welsh: *Eiddil-welltyn cynnar*. E.) *Agrostis minima*. Linn. Huds. Willd. With. ed. 6. Fl. Brit. *Knappia agrostidea*. E. Bot. Hook. In sandy maritime pastures, very rare. Near the mouth of the Thames, in Essex, a few miles from Lee. Lobel. Found by Mr. W. Stillingfleet in Wales. Frequent on the coast of Anglesey. Rev. Hugh Davies. A. May—July. E.)

(POLYPOGON.* *Cal.* two-valved, awned at the apex, concealing the *Bloss.* of two valves; the outer one with a terminal awn. *Seed* loose. E.)

(P. MONSPELIENSIS. Awns straight, thrice as long as the calyx: root fibrous. Sm. E.)

Kniph. 12—E. Bot. 1701—Schreb. 20. 3—H. Ox. viii. 4. row 2. 3—Park. 1166. 3—Panicke, Barr. 115. 2.

Stem one to two feet high. *Leaves* spreading, sharp-pointed, striated, rough on the ribs and margin. *Stipula* oblong, rough at the back. *Panicle* pale; awns of the calyx giving it a silky appearance. *Style* scarcely any.

Var. 1. Whole plant soft, and only five or six inches high.

Barr. 115. 1—Buzh. v. 66. 1.

Sir J. E. Smith considers this var. merely a diminutive, from want of nourishment. It is *Alopecurus panicus*. Linn. With. *Phleum crinitum* β. Huds.

ANNUAL BEARD GRASS. *P. monspeliensis*. Desfont. Schrad. Sm. Eng. Fl. *Alopecurus monspeliensis*. Linn. With. *Phleum crinitum*. With. ed. 2. Schreb. Sm. Fl. Brit. *Agrostis panicca*. Willd. E. Bot. Marshes and moist pastures near the sea. Purfleet, Essex; about two miles from Portsmouth, near Drayton. Ray. Near Cley, Norfolk. Mr. Humphrey. On Sunderland Ballast Hill. Mr. Winch. A. June—July. E.)

(P. LITTORALIS. Awns straight, about the length of the calyx: root creeping.

E. Bot. 1251—Dicks. II. S. 16. 1—Knapp. 22.

Stems branched, smooth; decumbent, and taking root at their lower joints; about a foot high. *Leaves* rough on both sides, as well as at their edges. *Stipula* slightly downy. *Sheaths* striated, smooth. *Panicle* lobed, purplish, shining, but less silky than the former, the awns being so much shorter. Sm. By a note in With. Herbar. it appears that the awn of the blossom is sometimes deciduous after flowering.

PERENNIAL BEARD GRASS. *Agrostis littoralis*. With. ed. 6. Sm. Fl. Brit. In muddy salt-marshes, rare. Wells, on the Norfolk coast; and in Essex. Near the powder magazine, four miles from Woolwich. Mr. Jackson. P. E.)

* (From πολυς, many, and πωγων, a beard; alluding to the numerous awns. E.)

MIL'IUM.* *Cal.* two-valved, one-flowered; valves tumid:
Blossom very short: (*Summits* pencilled with soft hairs:
Seed covered by the indurated corolla. E.)

M. LENDIGERUM. Panicle spike-like; flowers with awns.

Schreb. 23. 3—(E. Bot. 1107. E.)—Pluk. 33. 6—Gouan. Hort. 1. 2—
Branch of a panicle, Scheuch. 3. 11. C.

(*Stem* branched from the bottom, smooth. *Leaves* roughish at the edges.
E.) *Panicle* strap-spear-shaped, glossy, one inch and a half to three
inches long, three-eighths to half an inch broad. *Calyx* ventricose, po-
lished, and colourless at the base, finely serrulated at the edges, and the
longer valve awn-pointed. *Blossom*, larger valve terminating in four
little teeth, the smaller valve in two; much smaller than the calyx.
(*Awn* jointed; fixed above the middle of the larger blossom valve; as
long as the larger calyx valve; deciduous. *Seed* coated with the
hardened corolla, and enveloped in the shining calyx. E.)

PANICK MILLET GRASS. *Alopecurus ventricosus.* Huds. Meadows and
pastures. Isle of Sheppey. Near Weymouth. Lightfoot. Amongst
wheat, Gillingham, Norfolk. Mr. Woodward. (A. Aug. E.)

M. EFFUSUM. Flowers in panicles; loose and spreading; without
awns.

Curt. 248.—(Fl. Dan. 1143—E. Bot. 1106. E.)—H. Ox. viii. 5. 10—Ger.
6. 1—C. B. Th. 144—Park. 1153. 1—Portion of the panicle, Leers 8. 7—
Scheuch. 3. 6—Floret, Mont. 61.

Three or four feet high. *Leaves* half an inch or more in breadth; (bright
green, with a single rib, and rough edges; their *sheaths* strongly ribbed.
E.) *Panicle* tall (often a foot long. E.) and wide-spreading, very much
scattered from the various lengths of the secondary fruit-stalks, which
grow in whirls, and give the plant an airy, light, and elegant appearance.
(*Flowers* solitary, slightly drooping. *Cal.* permanently green. *Valves*
of the *Bloss.* forming a shining hard coat to the *seed.* Sm. E.)

SOFT MILLET. SPREADING MILLET GRASS. (Welsh: *Miled-wallt.* E.)
Wet woods, common. Frequent in Norfolk. Mr. Woodward. Plentiful
in woods about Wick Cliffs, Somerset. Mr. Swayne. (Speake, seven
miles south of Liverpool. Dr. Bostock. Walks at Corby, and at Naworth
Castle, Cumberland. Hutchinson. In woods around London. Graves.
Old Park, near Beaumaris. Welsh Bot. Roslin woods. Grex. Edin. E.)
A. May—June. P. Fl. Brit.†

AGROSTIS.‡ *Cal.* two-valved; valves acute, compressed,
awnless: *Bloss.* membranous, shorter than the calyx,
hairy at the base: *Seed* disengaged. E.)

(The species and varieties of British *Agrostides*, which run almost imper-
ceptibly into each other, have hitherto been involved in much confusion.

* (From a supposed resemblance to the plant which bore that name with the
Romans. E.)

† (Birds are remarkably fond of the seeds; so much so, that by sowing this grass
in game covers, it would save the corn. Hort. Gram. It is said to exhale a fragrance
similar to Sweet-scented Vernal Grass. E.)

‡ (From *αγρος*, a field, as common therein; and certain species being worthy of cul-
tivation. E.)

Sir J. E. Smith, Professor Hooker, and Mr. Bicheno, have laboured at their elucidation, and the result of their respective researches, in the most material points, happily coincides. They have at least succeeded in simplifying this genus, by reducing the number of supposed species; and the student will perceive that we have availed ourselves of these advantages, by (so far as was compatible with our own conviction) adopting the most recent characters and arrangement of the above-named authorities. E.)

(1) *With Awns.*

A. SPICA-VENTI. (Awn straight, rigid, several times longer than the blossom: panicle loosely spreading. Sm.

F. Bot. 951. E.)—*Fl. Dan.* 853—*H. Oz.* viii. 5, row 2. 3—*J. B.* ii. 462—*Leers* 4. 1—*Scheuch.* 3. 10.

(*Root* of many thick, whorled fibres. E.) *Straw* smoothish, two or three feet high. *Leaves* flat, rough. *Sheath-scale* fringed. *Panicle* eight to twelve inches long, (somewhat silky in appearance, leaning to one side, often purplish. E.); branches from two to four inches. *Calyx* valves nearly equal, one of them slightly serrulated. *Blossom*, valves equal in length, the inner narrower. *Awn* straight, near thrice the length of the blossom, and fixed immediately below its point.

SILKY BENT GRASS. Sandy-fields, common, particularly amongst corn.

A. June—Aug.*

(**A. CANINA.** Awn incurved from below the middle of the blossom; inner valve obsolete: calyx ovate, coloured: stems decumbent, with prostrate shoots: stipula lanceolate.

E. Bot. 1856—*Knapp.* 21—*Leers* 4. ?—*Scheuch.* 3. 9. c.

Root creeping, with downy fibres. *Stems* taking root at the lower joints; from one to three feet long. *Leaves* roughish on both sides, narrow, especially in the radical tufts, where they are setaceous, and by the presence of such tufts this species is readily distinguished from the awned varieties of *A. vulgaris*. *Stipula* elongated, easily torn: in *vulgaris* it is extremely short. *Panicle* spreading when in flower, otherwise collected into close tufts. *Flowers* erect, shining. *Valves* of the *calyx* purple, occasionally yellow. *Bloss.* white or greenish; smaller valve often entirely wanting, sometimes diminutive. Sm.

Var. 2. Awnless; (according to Dr. Withering, merely from the awn being, as is the smaller valve of the blossom, occasionally deciduous. E.)

BROWN BENT GRASS. *A. canina.* Linn. Willd. Hook. *Leers.* *A. vinealis.* With. ed. 6. Meadows and pastures common. P. June—July. Sm. E.)

* It is liable to be smutted. Stokes. Horses and goats eat it, sheep refuse it (After the spring-sown corn has vegetated, until the harvest, flocks of pigeons may be observed, with the most patient perseverance picking a precarious sustenance from the immature seeds and panicles of the grasses, justly remarked in the old couplet,

“The pigeon never knoweth woe
Until a bentong she doth go.”

Sheep never touch the stalks of grasses in general; and it may be here observed, with Mr. White, that rabbits make incomparably the finest turf, for they not only bite closer than larger quadrupeds, but they allow no bents to rise: hence warrens produce much the most delicate turf for gardens. E.)



- (A. SETACEA. Awn incurved from near the base of the blossom; inner valve minute: calyx lanceolate, tapering, rough: radical leaves bristle-shaped: stem nearly erect: panicle close, oblong.

Curt. 12—E. Bot. 1188.

Root rather woody, tufted, with strong downy fibres. Stems eight to twelve inches high, a little inclining. Leaves pale glaucous green; those of the stem with very long smooth sheaths. Stipula tender, often torn. Panicle erect, but little spreading; its branches angular, bristly. Flowers erect, pale purplish. Calyx of two unequal, scarcely awned valves, downy. Outer valve of the Bloss. lanceolate, shorter than the calyx, with a rough twisting awn, twice the length of the valve. Anthers purplish, deeply cloven at each end, prominent. Styles distinct. Sm.

BRISTLE-LEAVED BENT GRASS. *A. setacea*. Curt. Hook. *A. alpina*. With. ed. 6. On dry, turfy heaths, in the south and west of England. Curtis, who first distinguished this grass, received it from Piddleton Heath, Devon. It abounds in Cornwall. On Bagshot Heath. Curtis. Moors in Yorkshire. On the downs in Dorsetshire, and the higher part of the New Forest. P. June—July. E.)

A. PALUSTRIS. Calyx husks equal: blossom outer valve twice the length and breadth of the inner: awn straight, much shorter than the blossom, fixed a little beneath its point.

Straw nearly smooth, creeping and sending out fibrous roots and branches from the joints as in *A. stolonifera*. Leaves broad, very rough, those on the stem from four to five inches long, very taper-pointed; those on the branches shorter. Sheaths rough. Sheath-scale long. Panicle six inches long, branches half to two inches, spreading, the longer ones bare at the base, the shorter ones crowded with florets down to the main fruit-stalk. Calyx, husks equal, both serrulated on the keel, the inner only on its upper half. Blossom one quarter shorter than the calyx, outer valve, with a short awn, fixed beneath its point; inner valve but half the length and breadth of the outer. Awn two-thirds the length of the outer valve of the blossom, and fixed half its own length below its point.

(MARSH BENT GRASS. Welsh: *Maus-wellt y gors*. E.) Specimen from Dr. Goodenough, who considers it an awned var. of the *A. alba palustris* of Huds.* (Mr. Sinclair has proved that it retains its characteristics when raised from seed; and states that its properties and structure differ more from the other varieties of *A. stolonifera*, than those do from each other. In moist woods, supported by bushes, it attains the height of five feet. E.)

In swamps and moist ditches. Rev. Dr. Goodenough. P. June—July.*

A. PALUIDA. Calyx valves unequal; blossom inner valve hair-like, very short: awn somewhat longer than the blossom, fixed below its middle.

PLATE XXII.

About eighteen inches high. Straws smooth. Root-leaves bristle-shaped, rather rough. Stem-leaves much broader, flat above the sheathing part, and roughish. Sheath-scales long, pointed. Panicle a delicate pale green, about three inches long. Branches from half to one inch, but little

* (It is inferior to either var. of *A. stolonifera*, and can only be considered as a weed, choking up drains and underwood. Hort. Gram. E.)

expanding. *Calyx* valves unequal, the outer serrulated all along the keel, the inner only towards the point. *Blossom* inner valve deciduous, more like a very short and slender hair than a husk, and so minute that it is with difficulty found. *Awn* jointed, very slender, deciduous, somewhat longer than the blossom, and fixed beneath its middle.

(PALLED BENT GRASS. E.) Near the monument of Rufus, New Forest.
May—June.

(2) Generally without awns.

(A. VULGARIS. Panicle spreading, with divaricated, capillary branches: calyx-valves nearly equal: stem erect: stipula abrupt, very short. Sm. E.)

Gram. Pasc.—Fl. Dan. 163—(Hort. Gram.—E. Bot. 1671. E.)—Mus. Rust. iv. 2. 10—Stillingf. 3.

(Root tufted, strong, somewhat creeping. Stems twelve to twenty-four inches high: in var. 3, (γ), two to four inches only; smooth, lowermost joints often sending out roots. Leaves linear, taper-pointed, rough on both sides. Stipula extremely short and abrupt, by which, Prof. Schrader observes, all the vars. of this species, whether awned or not, are readily distinguished from *A. canina* or *A. alba*. Panicle purplish, slender and delicate. Flowers small, erect, shining. Valves of the blossom very unequal; the smaller notched at the summit, hairy at the base; larger, three-ribbed, shorter than the calyx, usually awnless, but sometimes, as in var. 2 (β), and not unfrequently in var. 3 (γ), furnished with a dorsal rough awn, about twice its own length. Summit densely feathery. Seed ovate, tumid, especially in var. 3 (γ), which is often, not always, infected with the smut, or *Ustilago*. In var. 4 (δ), the glumes become more or less elongated and leafy, the fructification being transformed into a bud, and the panicle viviparous. Sm.

Var. 2. *A. canina*. With. ed. 6. High and dry moors.

Var. 3. Dwarf. *A. pumila*. Linn. Mant. Willd. Lightf. Dicks. II. S. In poor barren soil, sometimes near the sea.

Var. 4. Wood. *A. vulgaris*. Var. 3, *sylvatica*. With. In woods.

FINE BENT GRASS. Welsh: *Meus-wellt addfwin*. *A. vulgaris*. With. Knapp. Relh. Hook. Grex. Sinc. Schrad. Hoffm. *A. hispida*. Willd. *A. tenuis*. Sibth. *A. capillaris*. Abbot. Roth. *A. stolonifera*. Leers. In meadows, pastures, and borders of fields, every where.

P. July—Aug. E.)*

(A. ALBA. Panicle condensed at the base of the main divisions: calyx-valves lanceolate, bristly at the keel: stem spreading, creeping: stipula oblong, ribbed.

E. Bot. 1189—Knapp. 28.

A larger plant than *A. vulgaris*, from which it essentially differs, in having an elongated, ribbed, bluntnish, mostly downy, finally torn stipula, whereas that of *A. vulgaris* is scarcely visible at all, or at most not a line in length.

* (It is disliked by cattle, as are the Bents in general, Swayne. In the sterile Hebrides it is deemed valuable. Walker. The straw of this grass yields an excellent plat for the manufacture of hats and bonnets. E.)

A. alba has long, decumbent, more or less branching, *stems*, sending out roots from their lower joints. *Leaves* broad, taper-pointed, ribbed, very rough on both sides, especially at the edges. *Panicle* four to six inches long, alternately lobed or divided into several large half-whorled bundles, of extremely unequal, angular, rough branches; the lowermost particularly crowded. *Calyx-glumes* keeled, acute, slightly unequal, rather tumid; their keels either entirely or partially rough with little bristles; their sides smooth; their edges not more membranous than the other part, in which last character they differ from *A. vulgaris*. *Bloss.* of two unequal valves; the larger ribbed, and occasionally awned from a little below the summit. *Styles* very short. *Summits* thick feathery. *Calyx* either greenish white, or brownish purple, but not so constantly in different individuals, as to mark a durable variety. Sm.

Var. 2. β . of Eng. Fl. *A. stolonifera*. Linn. Willd. Knapp. Fl. Brit. *A. alba*. Leers 4, 5. Stem more extensively creeping, sometimes floating; but the chief difference consists in the still more dense and tufted lobes of the *panicle*, as in E. Bot. and Leers 4, 5. *Calyx* besides is generally rough all over, with little bristly points.

In ditches and wet situations, on a clay soil; moist meadows; also in cold stiff arable land. In a close called the Far-Wet Croft at Blymhill, Staffordshire. Rev. S. Dickenson. Near Liverpool. Mr. Shepherd. Banks of Tyne and Wear. Mr. Winch. Holyhead. Welsh Bot. By the sides of the roads over Denbigh Green, and in various other parts of North Wales. E.)

Var. 3. γ of Eng. Fl. *A. sylvatica*. Huds. Linn. Willd. Distinguished by an elongation of the Cal. and Bloss. the flowers being imperfect, and many of them transformed to leafy buds. Lower branches of the panicle abortive. In the woods.

(Var. 4. *Minor*. Very diminutive; from two to three inches high; stiffer and more glaucous than the foregoing. Peculiar to the sea-coast. Mr. Griffith. E.)

MARSH BENT GRASS. *A. alba*. Linn. Willd. Sm. Fl. Brit. Hook. *A. stolonifera latifolia*, also *A. aristata*, Sinc. In moist meadows, and fields inundated in autumn. P. July—Aug. E.)*

* (Notwithstanding some remaining discrepancy in the synonyms of different authors, and our inability to reconcile them, even by a reference to numerous specimens which serve but to prove the subtle gradations of these plants, we can be at no loss to apply the practical remarks of agriculturists. *A. nigra* (black couch grass), of With. (*A. repens*, of Sm.) and *A. maritima* (sea bent grass), of With. should probably be comprehended under the present species. The roots of the former are black, and smaller than those of *Triticum repens* (white squitch), and still more pernicious in soils where they prevail, because they are wiry, brittle, and more difficult to eradicate. It is usual to attempt to destroy either kind of couch-grass by ploughing and pulverizing, in aid of which it may be well to employ hand and fork work, with burning. Nor should former notices of the *Florin* grass be here omitted. E.) At Orcheston, St. Mary, about eleven miles from Salisbury, is a small tract of meadow land, half a mile from the village of Shrewton, which is sometimes watered in the winter by means of a spring flowing out of a limestone rock. It is mown twice in the summer, and after a favourable season for watering, the first crop is near five tons per acre; the second about half as much. This extraordinary produce excited the attention of the Agricultural Society established at Bath, and from the reports made to that society, it appears that the crop principally consisted of *A. stolonifera*. Such also was the opinion of Mr. Stonhouse, who seems first to have noticed it in Howe's Phytologia, p. 51, referring to Gerard 26. 1. The attention which Mr. Swayne has since given to this subject, makes it probable that this grass is

HOL'CUS.* (One Floret barren : Bloss. awned : Seed enveloped with the hardened blossom ; Calyx keeled. Sm. E.)

H. LANA'TUS. (Husks two-flowered, woolly ; lower floret perfect, awnless : upper floret with a recurved awn inclosed in the calyx : leaves downy on both sides ; root fibrous. E.)

Gram. Pasc.—*Dicks. H. S.*—*Curt. 228*—(*Hort. Gram.*—*E. Bot.* 1169—*Fl. Dan.* 1181. E.)—*Schreb.* 20. 1—*Leers* 7. 6—*J. B.* ii. 466. 3—*Scheuch.* 4. 24. A. B.—*Park.* 1155. 1—*Anders.*

(Whole plant of a velvety softness. Barren floret containing a pistil. Germen similar to that of the fertile floret, but much smaller. Styles

only found in the second crop, and that the first principally consists of *Poa trivialis palustris*. See vol. i. ii. of the Memoirs of Bath Agr. Soc. (Though a strong prejudice has deservedly existed against this grass among farmers and agriculturists, its utility in some cases has been powerfully advocated. *Poa trivialis reptans* and *A. stolonifera* have been much confounded with each other, probably from their similarity of general character, and frequently growing intermixed, though there can be no reason to doubt the latter being the real Fiorin (butter) grass of the Irish : (*Meus-welt rhedegog*, in Wales. For various particulars we would refer to *Gent. Mag.* and *Monthly Mag.* for 1809 and 1810 ; to *Young's Annals of Agriculture* for 1794. vol. 22., and especially to an Essay by the Rev. Dr. Richardson of Clonfecla, in which many experiments are detailed tending to prove that Fiorin Grass produces hay preferred by cattle to all other, and nearly treble the quantity afforded by any other grass ; that this enormous produce is not the exhausting effort of a single year, but the regular crop to be expected ; that an English acre of meadow yielded in 1808 above 16,000 pounds weight, and the same extent of another meadow in 1809 produced 18,000 pounds of choice hay : that this grass is equally serviceable for winter green food, by which succulent provender milch cows may be well supported from December until late in April ; that by the transmissals of Dr. Richardson, it is already under cultivation in many places, both in England and Scotland ; that the slightest catch of the ground is sufficient for its existence and nourishment ; that it is in a great degree indifferent to the extremes of wet and drought, and is found in health at all altitudes ; that it is perfectly insensible to the severities of cold, that it can bear great privations both of air and sun, and that its universality of growth is most remarkable. It abounds in morasses and moors where other grasses cannot contend with it, on thin dry soil as well as wet, extending up the bleakest mountains of our harsh climates, and therefore appears particularly suitable to such unproductive and extensive tracts as Dartmoor, Exmoor, and others in England, the highlands of Scotland, the sterile wastes of Wales, or the bogs of Ireland. Mr. Sinclair considers var. *latifolia*, the Irish Fiorin, as by far the most valuable sort. He states, " the chief advantage of this grass, in permanent pasture, is its late growth. It remains in a degree inactive till other grasses have attained to perfection, and when their productive powers become exhausted, those of Fiorin begin ; and it will be found that the latest mouthful of herbage, and sometimes the earliest in those pastures, is principally afforded by this grass." On a comparison of the produce of Fiorin with that of cocksfoot grass (*Dactylis glomerata*), meadow fescue (*Festuca pratensis*), and meadow foxtail (*Alopecurus pratensis*), it will appear inferior to the two former species, and superior to the latter. *Hort. Gram.* Nevertheless, expectation has been too highly excited, and we learn that Lord Rous, at Henham-hall, has relinquished the cultivation of Fiorin. Of varieties produced by local circumstances, Mr. Sinclair discriminates *latifolia*, *angustifolia*, *aristata*, *nemoralis*, and *palustris*. Of the three former, representations are given in *Hort. Gram.*, the first and second being most productive, the others very inferior grasses or noxious weeds. Whether the permanency of each may be considered fully established remains questionable. Holdich has a var. *angustifolia* called surface squitch, or red robin, by farmers, and to be destroyed by drill husbandry. E.)

† (*Ολαος* of the Greeks : a kind of wild barley ; but the meaning of the term has never been satisfactorily explained. E.) *Holcus*, *Pinay*.

awl-shaped, simple. *Seed* very minute, abortive. *Curt.* *Panicle* from two to eight inches long, and from one and a half to three and a half inches broad. *Calyx* husks unequal. Both florets on short pedicles.

MEADOW SOFT GRASS. (Welsh: *Maswellt sypwraidd*. E.) Meadows and pastures, common. P. June—July.*

H. *BOULIS*. Root creeping: (leaves and joints slightly downy; calyx partly naked; lower floret perfect, awnless; upper with a sharply-bent (geniculate) protruding awn. E.)

Dicks. H. S.—*Fl. Dan.* 1059—*Curt.* 323—(*Hort. Gram.*—E. *Bot.* 1170. E.)—*Leers* 7. 7—*Schreb.* 20. 2—*Scheuch.* 4. 25.

(Whole plant more slender and less downy than the former. E.) *Panicle* three to five inches high, and one and a half to two and a half broad. *Calyx* husks nearly equal. (The creeping root and obvious recurved awn readily distinguish this species from the preceding. The young Botanist would expect to find this plant in the genus *Aira*, and certainly not without some reason; (but a permanent distinction may be observed in the coating of the seed by the cartilaginous vestige of the blossom. E.)

CREeping SOFT GRASS. Welsh: *Maswellt rhedegog*. E.) Corn-fields, hedges, and woods, (in light barren soil. E.) P. July—Aug.†

H. *AVENACEUS*. Calyx two-flowered; awn of the barren floret geniculate, fixed to the back of the blossom. Gmel. See *Avena elatior*.

(*HIEROCHLOE*.)† *Cal.* two-valved, three-flowered. *Bloss.* two-valved; *lateral florets* triandrous; pistil none; *terminal* (or central) one perfect, diandrous. Br.

H. *BOREALIS*. *Panicle* somewhat unilateral; peduncles smooth. Perfect florets awnless; barren ones slightly awned; outer valve of the blossom ciliated at the margin.

Hort. Gram.—*Fl. Dan.* 963.

About a foot high, smooth. *Leaves* strap-spear-shaped. *Panicle* brownish, shining. *Spikets* broadly ovate. *Cal.* valves ovate, acute, rather unequal, sometimes a little serrated at the point. *Florets* rather longer than the *cal.* and the *outer valves* of a firmer texture, scabrous when highly magnified. Central floret the smallest. Br. Hook. *Nectary* in two deep unequal linear segments. *Leaves* flat. Sm.

NORTHERN HOLY GRASS. H. *borealis*. Roem. and Schultz. Hook. Sm.

* This grass, though vegetating rather late in the season, produces an abundant crop; but it is not agreeable to cattle, and makes a soft, spongy hay, unfit for horses. It abounds chiefly in light and moist soils, such as turf or peat land. A plot of it, sown by the writer, was entirely killed by a long frost. Rev. G. Swayne. (Sir H. Davy has shown that its nutritive matter consists of mucilage and sugar, and that the nutritive matter of grasses most liked by cattle have either a sub-acid or saline taste; whence it is inferred that this grass might be rendered more palatable by a sprinkling of salt at the time the hay is carried; a hint worthy the attention of those possessing pastures in which this grass naturally prevails to the exclusion of more acceptable produce. *Hort. Gram.* E.)

† (Sinclair considers it the true Couch-grass of light sandy soil, producing little or no litter-math, disliked by cattle, and difficult to extirpate. Pigs are fond of the roots, which are nutritive, and have the flavour of new-made meal. E.)

‡ (From *ιερος*, sacred, and *χλωα* or *χλον*, a grass; a name established by Gmelin, because the plant is strewed before the doors of churches in Prussia on festival days. E.)

Eug. Fl. *Holcus borealis*. Schrad. *H. odoratus*. Linn. Willd. Don. MSS. Discovered by Mr. G. Don, in a narrow mountain valley called Kella, Angus-shire. P. July. E.)*

AIRA.† Cal. two-valved; two-flowered; without any intermediate rudiment. (Seed loose. Bloss. unchanged. E.)

(1) *Florets awnless.*

A. AQUATICA. Panicle expanding; florets without awns, smooth, longer than the calyx; leaves flat; (stipula oblong. E.)

Curt.—(E. Bot. 1557. E.)—Vail. 17. 7—Floret, Mont. 60.

(Stems floating, rising 12 to 18 inches above the water. Leaves strap-spear-shaped, flaccid. E.) Panicle four or five inches long, two to three inches broad when expanded; purplish, smooth, branched. (Anthers prominent, yellow. The flowers abound with honey. Sm. E.)

WATER HAIR GRASS. (Welsh: *Brigwellt dyfrdrig*. E.) In the margins of pools, rivers, and in ditches. P. May—July.†

(Var. 1. *Minor*. Whole plant only from three to five inches high. This diminutive habit is occasioned by the plant being deprived of its requisite supply of water, when growing on dry land.

North shore, Liverpool. Dr. Bostock. The same variety appears to have been communicated to Dr. Smith from Parkgate, Cheshire, by the Rev. T. Gisborne. E.)

(2) *Florets awned.*

A. CÆSPITOSA. Leaves flat; panicle expanding; petals villous and awned at the base; awn straight, short.

(Hort. Gram.—E. Bot. 1453. E.)—H. Oc. viii. 5. row 3. 17, and row 2. 1—Leers 4. 8—Ger. 5. 1 and 2—Ger. Em. 5. 1 and 2—C. B. Th. 34. 2 and 35—Park. 1158. 2 and 3—Dod. 561. 1—J. B. ii. 461. 3—Fl. Dan. 240—Scheuch. 5. 2 and 3.

Sometimes trails on the ground to the length of several feet. Panicle of a beautiful purple silky appearance, Dickenson; six or eight inches high, or more, and half as broad. Awns the length of the blossom. (Anthers purple. One of the florets sessile; the other on a short hairy stalk, which is more or less extended above the floret. In habit this and the next Approach *Arundo*; but in *Arundo*, the hairs surrounding the glumes are always more copious, and as long as the glumes. Sm. E.)

TURFY HAIR GRASS. (Welsh: *Brigwellt mawnog*. E.) Moist meadows and woods. (Very frequent in Scotland. Mr. Knapp; where Messrs. Don observed var. *visipera*; on the sea shore: *glomerata*; branchlets clustered; on Clova

* (Scent resembling that of *Anthoxanthum odoratum*. It is sold in Sweden to be suspended over beds, and is supposed to induce sleep. Mr. Sinclair observes that, though it is one of the earliest flowering grasses, and possessed of considerable nutritive property, the powerful creeping roots, its tender nature, and the great deficiency of foliage in the spring, are demerits which discourage the idea of recommending it to the agriculturist. E.)

† (*Aipa* of Hippocrates and Theophrastus. E.)

‡ (Water-fowl are very fond of the young sweet shoots, as also of the seeds; it may therefore be introduced into decoys and other places, (by throwing the plants into the water with a weight tied to them,) with good effect. Salisbury. E.)

mountains: *gracilis*; slenderer, leaves shorter: meadows in Angus-shire. Hooker. E.) P. June—Aug.*

(A. ALPINA. Panicle rather dense and upright. Florets the length of the calyx, acute; one of them on a smooth stalk: awn short, from near the top of the outer valve. Leaves involute awl-shaped, with smooth sheaths.

E. Bot. 2102.

In habit much resembling the last, but only half as tall. Radical leaves become awl-shaped: the back, though ribbed, is smooth. Panicle branches fewer and less spreading than in *A. caespitosa*. Flowers decidedly larger, greener, less numerous; in mountainous situations often viviparous. Partial stalk, elevating one floret, quite smooth, not downy. Sm. Wahlenberg considers this to be the real *A. alpina* of Linnæus, in which suggestion Hooker and Smith concur, though the fact remains somewhat problematical.

SMOOTH ALPINE HAIR GRASS. *A. levigata*. E. Bot. E.) On Highland mountains. Mountains of Clova, Angus-shire; and sea-side near Dundee, in which latter situation it is said not to be viviparous. Mr. G. Don. On Ben Arthur, by Loch Long. Mr. Borrer. Ben Lomond. Hooker. P. June—July. E.)

A. FLEXUOSA. Leaves like bristles; straws almost naked; panicles diverging; fruit-stalks flexuose.

(E. Bot. 1519—Hort. Gram.—Shreb. 30. E.)—Fl. Dan. 157—Scheuch. Pr. 6. 1—H. Oa. viii. 7. row 3. 9. at the corner, &c.—Leers 5. 1.

About a foot high when young, taller when old. Panicle fine glossy purple, from two to three inches long, and half an inch broad; branches flexuose and nearly upright in its young state, the florets mostly pointing one way; as it approaches maturity the purple fades, the branches expand so that the panicle then measures one or one inch and a half across. Blossom woolly at the base. Awn geniculate, half as long again as the blossom.

(WAVY HAIR GRASS. Welsh: *Brigwellt gwyrddam mynyddau*. E.) Heaths and barren pastures. Wick Cliffs. Mr. Swayne. Rocky moors in the North. Mr. Woodward. Crib y Ddresil. Mr. Griffith. Anglesey. Welsh Bot. Dry woods in Sutton Park, Warwickshire, and woods in the New Forest, near Stony Cross, Hampshire. P. June—Aug.

(Var 2. Panicles slender and compact: fruit-stalks scarcely flexuose: leaves short, somewhat rigid, almost all root-leaves. Fl. Brit. E.)

Scheuch. It. p. 455. f. 15—Scheuch. Pr. 4. 4—Stillingf. 4—Leers 5. 2—Florets, Scheuch. 4. 16. A, B, C.

A. flexuosa β. Fl. Brit. *A. montana*. Huds. and Relh. but not of Linn.

Var. 3. Straw more leafy: panicle white: fruit-stalks scarcely flexuose.

* It is very apt to grow in tufts, and occasions irregularities in the surface of meadows. The leaves of this grass are the roughest and coarsest of all the grasses growing in pasture or meadow grounds, and therefore cattle will seldom touch them, unless forced by hunger. It produces an abundant quantity of leaves, and few flowering straws; has a very disagreeable appearance in meadows, and often occupies much ground which might be made to produce better grasses. To get rid of it, the land should first be drained, and then the tufts of this noxious weed should be pared up and burnt. The ashes will be a good manure. Called by the common people *Hawocks*, *Rough Caps*, *Bulls' Faces*. Rev. G. Swayne.

Scheuch. Pr. 24. 6. 1—Moris. t. 7. f. ult.

Leaves half the length of the straw, rather flaccid, sheathing the stem higher up than in the other varieties.

In shady places.

Fl. Brit. E.)

A. CANESCENS. Leaves like bristles; sheaths rough; flowers in a panicle; awn not longer than the calyx.

(*E. Bot.* 1190. E.)—*Plat. XXIV—Fl. Dan.* 1023; but the panicle much larger and more expanded than it grows with us—*Lob. Adv. Alt.* 466. 1—*J. B.* ii. 463. 2.

Awns encompassed with little teeth in the middle part, brown and thick below, but whitish, slender, and somewhat club-shaped above. Paler than most other grasses; which distinguish it at first sight. Linn. No plant alters its appearance more completely when cultivated than this, growing much larger, quite upright, and losing entirely its grey colour. Woodw. From four to six inches high. Root-leaves very slender. Stem-leaves broader. Panicle spike-like, purplish, one and a half inch high, half an inch broad. Calyx husks unequal; (*Pl.* 24. a.) Awn the length of the shorter husk, nearly twice as long as the blossom. The structure of the awn is remarkable, the lower half is thicker, opaque, and yellow brown, the upper half very fine, whitish, semi-transparent, fixed to the centre of the broad top of the opaque woody part, which is encompassed with very minute teeth. (*Pl.* 24. c.) (Anthers purple, giving a cast of colouring to the panicle. E.)

GREY HAIR GRASS. Sandy shores. Yarmouth Dunes. Mr. Woodward. (On the north shore, near Poole. Dr. Pulteney. E.) P. July—Aug.

A. PRÆCOX. Leaves like bristles; sheaths smooth, angular with furrows; panicles spike-like; awn nearly twice as long as the calyx.

Dicks. H. S.—Curt. 146—(*E. Bot.* 1296. E.)—*Fl. Dan.* 383—*Pluk.* 33. 9—*Ray* 22. 2.

From two to five inches high. Spike-like panicle one to one and a half inch long, less than a quarter of an inch broad. Blossom valves cloven at the end, nearly as long as the calyx. Awn in structure similar to that of *A. canescens*, but wants the broad top to the lower opaque part. Sufficiently distinct from *A. canescens*, and flowers earlier.

EARLY HAIR GRASS. (Welsh: *Brigwellt y gwanwyn*. Common dry gravelly soil. A. May—June. E.)

A. CARYOPHYLLÆA. Leaves like bristles; sheaths smoothish, furrowed; panicle wide spreading when ripe; (triple forked: E.) awn taller than the calyx.

Dicks. H. S.—Curt.—(E. Bot. 812. E.)—*Fl. Dan.* 382—*H. Ox.* viii. 5. row 3. 11—*Stillingf.* 5—*Scheuch. It.* ii. 18. 2—*Barr.* 4. 1—*Scheuch.* 4. 15.

Varies very much in size, from two to twelve inches high. Panicle few-flowered; close whilst in flower, widely expanding when in seed. Blossom shorter than the calyx. Awn twice as long as the blossom, fixed below its middle, yellow and opaque in the lower, paler and finer in the upper part. The larger plants somewhat resemble *A. flexuosa*, but want the zigzag fruit-stalks (sometimes slightly so. Sm. E.) and the woolliness at the base of the blossom. The smaller plants may be distinguished from *A. præcox* by the panicle expanding when ripe, and by the awn being less than twice the length of the calyx. It is, moreover, an annual plant.



SILVER HAIR GRASS. (Welsh: *Brigwellt ariannaid*. E.) Sandy pastures, frequent. A. July.*

MELICA.† (*Cal.* two-valved, one or two-flowered, with the rudiments of one or two intermediate ones. *Stamens* dilated at the base. *Seeds* coated with the indurated blossom. E.)

M. NUTANS. Petals not fringed: panicles drooping, undivided: (spikelet with two perfect florets. E.)

Curt.—(*E. Bot.* 1059. E.)—*Fl. Dan.* 962—*Schrch.* 6. 1—*C. B. Pr.* 20. and *Th.* 155—*Park.* 1151. 5—*Barr.* 95. 2. and 96. 2—*J. B.* ii. 434. 1—*Leers* 3. 4—*Scheuch.* 3. 16. *D, E, F.*

(One foot or more high; *leaves* strap-spear-shaped. *Cal. glumes* ovate, nerved, purplish brown, margin pale. *Bloss. valves* cartilaginous, nerved, outer one large. Between the two perfect flowers are the minute pedunculated rudiments of a third, consisting, as Prof. Hooker observes, of a two-valved hardened blossom without either pistil or stamen. E.) *Panicle* three or four inches long, few flowered, flowers mostly pointing one-way. *Branches* only three or four, and those not subdivided.

MOUNTAIN MELIC GRASS. *M. montana*. Huds. Mountainous woods in Yorkshire, Westmoreland, and Cumberland. Helkswood, by Ingledon, Yorkshire. Mr. Woodward. (Grasswood, near Conniston. Mr. Caley. Lower part of Garreg wen rocks, close to the river near Garn, Denbighshire. Mr. Griffith. Frequent in the woods of Cheshire, as Early Banks-Wood, &c. Mr. Bradbury in Bot. Guide. Castle Eden Dean, Durham. Mr. Winch. Roslin woods, by the path side. Grev. Edin. E.)

P. June—July.†

M. CÆRULEA. Panicle compact; flowers cylindrical; straw without joints.

Curt.—(*E. Bot.* 750. E.)—*Fl. Dan.* 239—*H. Ox.* viii. 5. row 3. 22—*Leers* 4. 7.

(A hard, coarse, grass, with the habit of an *Arundo*. *Root* of many strong fibres. *Stems* rather bulbous at the base, with a single joint near the bottom. Stalk of the spikelet with two perfect florets, and one or two sterile ones above. *Leaves* all springing from or near to the base, long and linear. *Panicles* purple; when growing in shady situations pale brown, or greenish. *Antlers* large, purple. E.) *Straw* near half a yard high. *Panicle* three to five inches long. *Branches* few, distant, nearly upright. *Calyx* with two, three, or four florets, but mostly with two; and though the number of the florets, and its general habit, which it must be confessed but ill accords with that of the other *Melicas*, have led some Botanists to consider it an *Aira*, the presence of the pedicle marks its real situation. In some specimens gathered in the New Forest the florets are a little hairy at the base, which circumstance seems to have influenced Haller to rank this species as an *Arundo*.

* (This and the preceding are soon dried up, and can yield nothing but a little early food for sheep. Sm. E.)

† (From *μῆλις*, honey: its seed being somewhat sweet. E.)

‡ In the Isle of Raza this grass is made into ropes for fishing-nets, which are remarkable for lasting long without rotting. *Reumann's Tour*, 1774. p. 297. Cows, horses, and goats eat it.

PURPLE MELIC GRASS. (Irish: *Birrah*. Welsh: *Melic-wellt rhuddlas*. Gaelic: *Pund-Glass*. E.) *Aira carulea*. Linn. Sp. Pl. Huds. Leers. Scop. Arnud. Hall. (*M. carulea*. Linn. Mant. Lightf. With. Curt. Sm. Willd. Hook. Schrad. Host. Grev. E.) Boggy barren meadows and heathy moors, abundant. P. June—July.*

M. UNIFLORA. (Panicle branched, slightly drooping toward one side; flowers erect. Spikelet with only one perfect floret.

Curt. 301—(*E. Bot.* 1058—*Fl. Dan.* 1144. E.)—*Mont.* 2. 1—*H. Ox.* viii. 7. 49—*Villars* 3—*Lob. Adv. Alt.* 465. 1—*J. B.* ii. 434—*Park.* 1151. 3.

Little spike of neutral florets, inversely-egg-shaped, between the blossom and the inner valve of the calyx, together with its fruit-stalk as long as the blossom, composed of the rudiments of three and even four florets, each consisting of two membranous valves similar in shape to those of the perfect floret; each supported on a fruit-stalk of its own, rising from the base of the inner valve of the last rudiment; and each as small again as the floret below it. No stamens or pistils in any of them. From fifteen to eighteen inches high, or more. *Straw* angular, ascending. *Panicle* of few flowers, scattered, three to five inches long. *Branches* bowed whilst in flower, afterwards upright. (*Flowers* tremulous, variegated with green, white, and reddish brown. A somewhat larger plant than *M. nutans*, and with broader leaves. E.)

WOOD MELIC GRASS. (Welsh: *Melic-wellt y goedwig*. E.) *M. Lobeliai*. Villars. *M. nutans*. Huds. Woods and hedges, not uncommon. Lanes in Devonshire, very frequent. (Between Leatham and Blythe-Hall, near Ormskirk. Dr. Bostock. Anglesey. Welsh Bot. Roslin woods, opposite Hawthornden. Grey. Edin. In the lanes and woods of Brislington, between Wick and St. Ann's, &c. near Bristol. Plantations of T. Pearson, Esq. Tettenhall, Staffordshire. E.) P. May—July.

SESLERIA.† *Involucr.* two-leaved: *Cal.* two-valved, with from one to three florets: *Bloss.* *Outer valve* tridentate; *inner valve* bidentate: *Styles* combined. E.)

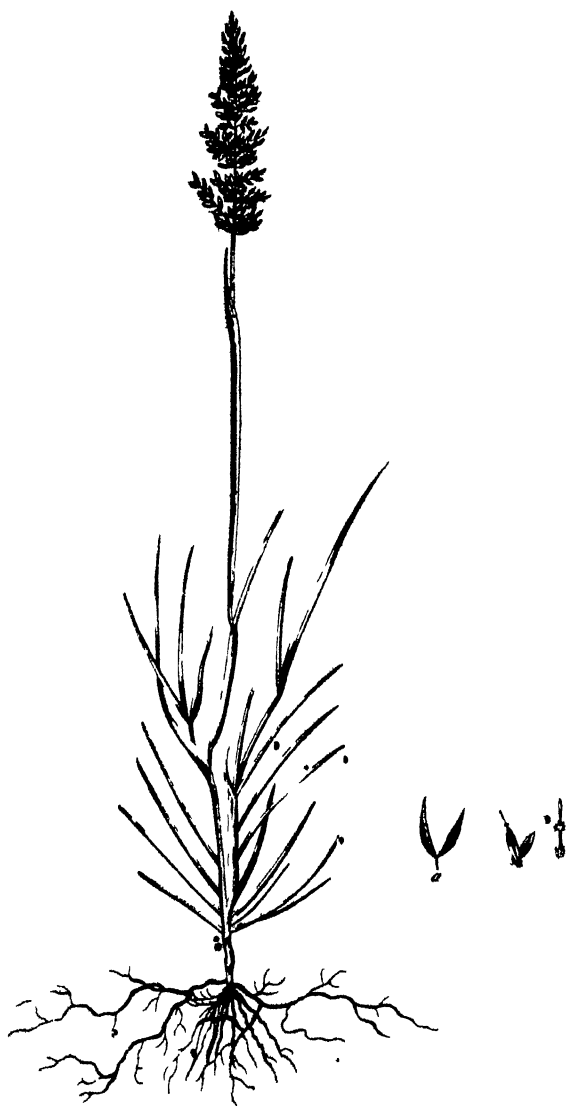
S. CÆURU'LEA. *Straw* undivided; spike egg-oblong; (imbricated: bractæas alternate. E.)

Dick. H. S.—*Jacq. Pl. Rar.* 21—(*E. Bot.* 1613. E.)—*C. B. Pr.* 21. 1. and Th. 158—*Park.* 1152. 6—*Scheuch.* 2. 9. A, B.

Spike from half to nearly one inch long. *Seed* hairy. *Calyx* valves terminating in awn-like points. Hall. *Florets* on short fruit-stalks, purplish, or brownish white. *Calyx* containing mostly two florets, sometimes a little longer, at others rather shorter than the florets; edges and keel bearded.

* Horses, sheep, and goats eat it. *Chermes graminis* is found upon it. Linn. (For pasture or hay Mr. Sinclair proves it to be of very inferior value. English cows and sheep reject it. E.) In the turf moors below Glastonbury, in great abundance. The country people make of the straws of this grass a neat kind of besoms, which they sell to the housewives in the neighbourhood, as a cheap and not despicable substitute for hair brooms. Mr. Swayne. (In some of the Scottish Isles it is manufactured into ropes for fishing nets. E.) Flourishes in the neighbourhood of the copper works at Parys mountain in Anglesey, while almost every other vegetable, even Lichens, are injured or destroyed. Penn. Wales, ii. 265. (In the Highland sheep-walks it luxuriates, and is valuable. Dr. Walker. E.)

† (In honour of Leonard Sestera, a Venetian physician, 1745. E.)



Blossom valves equal in length; edges and keel bearded. *Outer* with five ribs, cloven at the end into four teeth, ending in awn-like points, the two middle ones shorter, with the keel running out from between them into a short awn twice as long as the teeth. *St.* From six to nine inches high, trailing and afterwards ascending. *Straw* with a single sheath, ending in a short leaf. *Leaves* broad, strap-shaped, with a strong mid-rib. *Spike* lead colour, or greyish, sometimes purplish as represented in Jacquin. (*Root* forming dense tufts. *Anthers* large, yellow, tipped with purple. E.)

BLUE MOOR GRASS. *Cynosurus caruleus*. Linn. *Aira varia*. Jacq. (*S. carulea*. Scop. E.) Mountainous pastures in the north (both in England and Scotland. On all the calcareous mountains of Leitrim and Sligo. E. Murphy, Esq. E.), sometimes in marshes. Crevices of the lime rocks at the foot of Ingleborough. Stokes. Lime rocks, Conzick Scar, Kendal. Mr. Gough. (Tarn House, Brampton, Cumberland. Hutchinson. Ben Lomond. Hook. Scot. Malham Cove, and on most of the lime rocks in Craven, Yorkshire. Mr. Caley. On both banks of the river Wear; and on all the limestone hills between South Shields and Cleadon. Mr. Winch. E.) P. April—June.*

PO'A.† *Cal.* two-valved, many flowered: (*Spikets* rounded at the base. *Seed* loose, covered by the blossom. E.)

(1) *Panicle* spreading.

P. AQUATICA. *Panicle* erect, branched, spikets strap-shaped, six-flowered.

Curt. 330—*Fl. Dan.* 920—(*Hort. Gram.*—*E. Bot.* 1315. E.)—*H. Ox.* viii. 6. 25—*Ger.* 7. 2—*C. B.* 40—*Ger.* 6. 2—*C. B. Th.* 38—*Ger. Em.* 6. 1—*Leers* 5. 5—*Scheuch.* 4. 1—*Mont.* 38.

Straw from four to six feet high; upright, two edged, smooth. *Leaves* straight, keeled; rough on the edge and the keel. *Sheaths* cylindrical, scored, smooth. *Huds.* *Leaves* broad, channelled. *Panicle* eight or ten inches high, and four or five broad, purplish. *Spikets* egg-spear-shaped *Curt.* (*Florets* obtuse, seven-nerved. E.)

(It sometimes exhibits viviparous flowers. Mr. Davies in *Fl. Brit.* E.)

REEDY MEADOW GRASS. (**WATER MEADOW GRASS.** E.) (*P. aquatica*. Linn. *Glyceria aquatica*. Sm. E.) Marshes and banks of rivers.

P. July—Aug. 1

* (According to Dr. Walker this plant flourishes to the height of two or three thousand feet among its native mountains, and in such situations it is particularly acceptable to cattle. The Doctor must here allude to sheep, who are known to be fond of it. Mr. Sinclair admits, that what foliage it affords is more nutritive than that of most other alpine grasses; yet he considers it unworthy of cultivation. E.)

† (From *πoα*; meaning an herb for the use of cattle. E.)

‡ An extremely useful grass to sow upon the banks of rivers or brooks. Horses, cows, and sheep are fond of it when young. (On the banks and islands of the Thames it is generally mown twice in the year for hay. In the fens of Cambridgeshire and Lincolnshire, immense tracts that used to be overflowed, and still retain much moisture though drained by mills, are covered with this grass, which affords rich pasturage and excellent winter fodder. In the fens of Ely, according to the reports of the West of England Agricultural Society, it attains the height of six feet, and is usually cut when about four feet high, and bound in sheaves. It is more acceptable as fodder for milch cows than for horses. In drains and ditches it proves a troublesome incumbrance, removed by an instrument called a *bea*, resembling an iron roller with revolving blades, and worked by horses. Mr. Sinclair states, that the nutritive matter of this grass con-

P. DISTANS. Panicles with subdivided branches, (which are at length reflexed. E.); spikets five-flowered; florets distant, blunt, (slightly five-nerved. E.); calyx, valves very unequal.

(Curt.—E. Bot. 986. E.)—PLATE XXV.

From nine to twelve inches high, or more. *Straw* bent at the lower joint; smooth. *Root-leaves* short, rather stiff, slender, smooth. *Stem-leaves* sheathing, rough at the edges near the end. *Sheath-scale* short, broad. *Panicle* about three inches long, two inches wide; *branches* in distant whorls, four or three in a whorl, greatly expanding; when ripe still more reflexed. *Spikets* five or six-flowered. *Calyx* smooth, one valve twice as large as the other. *Blossom* smooth, membranous at the edge and the point, not woolly at the base, unequal, blunt.

REFLEXED MEADOW GRASS. *P. distans*. Linn. *Glyceria distans*. Sm. E.) *Aira aquatica distans*. Huds. (*Poa retroflexa*. Curt. E.) (Between London and Hampstead. Curtis. By the banks of the river at Yarmouth, Norfolk. Mr. Woodward. About Ramsgate: and road side, near Castle Eden, Durham. Mr. Winch. E.) Sandy places near Exmouth. About Northfleet in Kent, and in Yorkshire and Lancashire. (Coast of Angushire, and other parts of Scotland. Mr. G. Don. Hook. Scot. E.)

P. June—July.*

P. PRATEN'SIS. Panicle spreading; spikets four or five flowered; straw cylindrical, upright. Sheath-scale short and blunt. (Florets five-ribbed, connected by a web. Stem and leaves smooth. Sm. E.)

Gram. Pasc.—Curt.—(E. Bot. 1073. E.)—C. B. 28—H. Ox. viii. 5. 18—Stillingf. 6—Leers 6. 4—Scheuch. 3. 17—Anders.

Root creeping. *Spikets* egg-shaped, one-flowered, often five-flowered, green, changing to a purplish colour. Sm. E.) From one to two feet high. *Panicle* heavy when in seed, not greatly diverging, two or four inches long, and more than half as broad. *Leaves* much less rough than in *P. trivialis*, but not always smooth. Mr. Swayne observes, that in meadows which have been flooded the whole winter, it flourishes so as nearly to exclude every other grass. Bath. Soc. vol. ii.

SMOOTH-STALKED MEADOW GRASS. (Welsh: *Gweun-wellt-lyfn*. E.) Meadows, dry banks, and even on walls. It constitutes a considerable part of the herbage of the rich meadows in the flat parts of Somersetshire.

P. May—June.†

tains a greater proportion of sugar than exists in any of the superior pasture grasses. It is subject to the attacks of the little parasitic fungus *Uredo longissima*, which appears on the leaves and stems in long brown-coloured stripes. Vid. With. v. 4. p. 372. It affords a favourite food for the caterpillar of *Phalana Festuæ*, producing the beautiful Gold-spot moth.

* (After experimental culture of several years, it proves unworthy of attention. Mr. Curtis imagines that the rigid bending back of the panicle branches is occasioned by the gradual enlargement of certain small tubercles, situate at their base on the upper side. E.)

† (Both this species and *P. trivialis* are early grasses, and have been deemed valuable for pasturage; but Mr. Salisbury finds the former inclined to become so matted by its creeping roots as to be unproductive, either of herbage or seed. Only a moderate portion should therefore be introduced. The seeds in both species hang together by a substance resembling cobwebs, when thrashed, and require to be rubbed, either in ashes or dry sand to separate them before sowing. Though Mr. Sinclair admits it to be adapted for permanent pasture, he considers several other grasses decidedly supe-

Var. 2. *Setacea*. Leaves slender, straw smooth.

H. Or. viii. 5. 19—Leers 6. 3.

Spikets three-flowered, pubescent, root-leaves like bristles. Huds. *Spike* florets three or four, not merely woolly at the base, but likewise along the keel.

(*P. angustifolia*. With. ed. 4. *P. pratensis* β. Sm. *P. nemoralis* β. Fl. Brit. E.) Woods and Hedges.

(Var. 3. Whole herbage glaucous. Stem but a span high; leaves short, broad and flat. Panicle much smaller and less branched than in the common *pratensis*. Florets three in number, connecting web extremely copious, so as to be visible without pulling them asunder.

E. Bot. 1004.

SHORT BLUEISH MEADOW GRASS. Welsh: *Gweun-wellt-wybrliw*. *P. sub-cærulea*. E. Bot. *P. humilis*. Ehrh. With. Ed. 6. *P. pratensis* β. Huds. Hook. *P. pratensis* γ. Sm. Eng. Fl. In mountainous situations, in Wales, Anglesey, Scotland, and the north of England.

Sm. E.)

P. ALPI'NA. Panicle spreading, very much branched: spikets four to six-flowered, heart-shaped.

Scheuch. Pr. 3. 4—(E. Bot. 1003. E.)

Florets from two to five in each spiket. Scheuch. (with a few hairs at the base, but wanting the long web which connects the florets of most *Poa*. E. Bot. Six to twelve inches high, nearly upright. Leaves linear, rather broad, many ribbed, radical leaves tufted. E.)

Var. 2. *Vivipara*. Panicle viviparous.

Fl. Dan. 807—Scheuch. It. i. 4. 2—Scheuch. 4. 14.

About seven inches high. Panicle two to three inches long; only some of the florets viviparous. (Mr. Griffith, who has grown this variety for eighteen years in his garden, finds it uniformly viviparous.

rior. He remarks, "it comes early in the spring, but its produce is inconsiderable, and its strong creeping roots exhaust the soil. Besides the superiority of produce, *Anthoxanthum odoratum* and *Poa trivialis* have fibrous roots, which impoverish the soil in a far less degree." All creeping roots scourge the soil; therefore, *cæteris paribus*, the fibrous-rooted plants are to be preferred. It is judiciously remarked in Fl. Lond., that to ensure early hay harvests (desirable from the probability of finer weather, from not interfering with the corn harvest, and as affording the best chance of a second crop), such grasses should be selected as flower early, and nearly together, which may be about the last week in May. To such result should cultivation tend; for upland pastures, and even meadows in a state of nature, generally produce a mixture of coarse, unprofitable, plants. The culm is supposed to be excellent for straw plat; indeed, the prize bonnet, in imitation of Lægilorn, which obtained the reward of the Society of Arts for Miss Woodhouse of Connecticut, was made from this species of grass. E.)

* (This is an inferior pasture grass, possessing the worst qualities of *P. pratensis*. In a shady situation it has been known to attain the height of three feet in the culm, having a handsome appearance. Though this plant contain more of bitter extractive, and less of saccharine matter than *P. pratensis*, cattle do not dislike it on that account, and it has been remarked by Sir H. Davy, that the grasses most acceptable to them "have either a saline or subacid taste." This bitter extractive and saline matter may be supposed, not merely to operate as nutriment, but to assist and modify the digestive powers. The hare, which, according to Mr. Sinclair, rejects *P. humilis*, (this Var. 3), decidedly selects the sweeter kind. E.)

ALPINE MEADOW-GRASS. Inch Earn, north of Forfar. Mr. Mackay. Fl. Brit. On Snowdon. Crib y Ddresil. Mr. Griffith. Malghyrdy, Benteskerny, and on Ben Lawers. Mr. Brown. Mr. Murphy finds Var. 2. on Benbulbin, Sligo. E.) P. June—July.*

(*P. FLEXUOSA*. Panicle flexuose; spikets three flowered; glumes egg-shaped, connected by a web; leaf-scales all spear-shaped.

E. Bot. 1123.

Colour light, rather glaucous green. Stems ascend obliquely, often bent at the joints. Leaves spreading, narrow, sharp, roughish above, with long, lax, flattish sheaths. Panicle egg-shaped, rather dense, its stalks angular, zigzag, especially at the base. Spikets broad-egg-shaped, rather glaucous. Calyx-glumes a little unequal, hardly falcate, acute, rough at the keel, white and thin at the edge, and stained with purple toward that part. Florets shaped and coloured much like the calyx, or rather less egg-shaped, margin smooth, not silky, keel rough, bases connected by long hairs. Inner glumes rough at the edge.

Differs from *P. alpina* in its glaucous hue; straw more leafy, leaves narrower, more acute, and rough above; fruit-stalks more or less zigzag; glumes narrower, connected at the base by hairs.

ZIGZAG MEADOW GRASS. *P. flexuosa*. Sm. Fl. Brit. *P. laxa*. Hoenke. Willd. Hook. Sm. Eng. Fl. Discovered by Mr. John Mackay on Ben Nevis, in Scotland; growing in small tufts. P. July. Fl. Brit. E.)

P. BULBOSA. Little spikes egg-shaped; florets rather smooth, acute; straw upright, bulbous at its base. Huds.

(*E. Bot.* 1071. E.)—*Vaill.* 17. 8.

Panicle branched, the branches angular, rather rough. Little spikes egg-shaped, acute; with three, four, or five florets, a little hairy at the base. Huds. (The bulbs grow in clusters, resembling little onions, and during most part of summer remain blown about inactive. With the autumnal rains they vegetate, fix themselves by long downy radicles, then produce thick tufts of leaves; and in April or May they flower. By these bulbs, the serrated leaves and the woolly web connecting the floret, added to the broad veinless glumes and small panicle, this species may be known with certainty. Sm. in *E. Bot.* E.)

(**BULBOUS MEADOW GRASS.** Meadows and pastures near Clapham, Surry. (Sandy ground near Yarmouth, Norfolk. Mr. Stone. Plentiful at Lowestoft. Sir J. E. Smith. At Little Hampton, Sussex. Mr. W. Borrer. On the Steine at Brighton. Salisbury. E.) P. May.†

P. ANNUA. Panicles spreading horizontally; branches in pairs; spikets mostly four-flowered; (without a web; stems oblique, compressed. E.)

Gram. Pasc.—*Curt.* 1. 2—(*Hort. Gram.*—*E. Bot.* 1141. E.)—*Stillingf.* 7—II.

* (Not worthy the farmer's particular attention. Hares and rabbits are remarkably fond of this grass. *Hort. Gram.* E.)

† (Mr. Turner observes (*Bot. Guide*), that this plant forms a principal part of the herbage of Yarmouth Denes, but that it withers very soon after flowering, and so early as in July no traces of stems or leaves are to be found. Mr. Salisbury considers that the bulbs are essentially requisite to nourish the plants, and to propagate the species in arid soils; and such is their power of retaining vitality, that after having been preserved two years in paper, he has known them to vegetate. E.)

Os. viii. 5. 21—*Mus. Rust.* iv. 2. 1—*Dod.* 560. 1—*Lob. Obs.* 9. 1—*Ger. Em.* 2. 1—*Park.* 1156. 4, the upper left hand—*C. B. Th.* 31—*J. B.* ii. 465. 1—*Ger. Em.* 3. 2—*Park.* 1156. 4, lower left hand—*J. B. Th.* 2. *—*Panicle*, *Sc. Leers* 6. 1—*Anders.* called *C. compressa*—Branch of the panicle, *Scheuch.* 3. 17. E.—*Park.* 1156. lower right hand.

Panicle's branches in the middle often in threes, at the top solitary. *Curt.* *Spikets* larger than those of *P. pratensis*. *Dickenson.* It varies extremely in height, from two to twelve inches or more. *Leaves* tender, smooth, except towards the end. *Panicle* thinly set, nearly two inches long, and almost as broad. *Spikets* from three to five-flowered. External valve of the blossoms hairy at the base and on the lower part of the keel. Its smoothness distinguishes it from *P. trivialis*; its compressed straw, and thinly set panicle, from *P. pratensis*.

SUFFOLK GRASS, (from its having been first cultivated in that county. E.) ANNUAL MEADOW GRASS. (Welsh: *Gweun-wellt blynyddawl.* Pastures, paths, gravel walks, and the borders of fields: (few plants more common. E.) A. April—Sept.*

P. TRIVIALIS. Panicle spreading; spikets three-flowered, woolly at the base; straw upright, rough: sheath-scale tapering to a point. *Curt.*

Gram. Pasc.—*Curt.*—(*Hort. Gram.*—*E. Bot.* 1072. E.)—*Park.* 1156. 4. upper right hand fig.—*C. B. Th.* 30.

Root creeping. Whole plant rough. One and a half to two feet high, or more. *Panicle* six or eight inches long, and three or four broad when fully expanded. *Florets* mostly three or four in each spiket, generally three. Has some resemblance to *P. pratensis*, but its creeping root, and the great roughness of the straw and leaves, sufficiently distinguish it, though the uncertainty of the number of florets in each spiket might otherwise occasion a doubt.

BIRD GRASS, by which name it is known to the seedsmen. FOWL GRASS. ROUGH-STALKED MEADOW GRASS. (Welsh: *Gweun-wellt lledarw.* E.) Moist meadows and sides of ditches. P. June—July.†

Var. 3. *Replants.* ORCHESTON LONG GRASS. *Stems* trailing, taking root at the joints. *Spikets* with two or three florets. Structure of the spikets the same as in the preceding, and the base of the lower floret equally woolly; but the great length to which it trails on the ground before the flowering stem rises up gives it a claim to particular notice.

There is great reason to believe that this is the famous Orcheston grass, which, as Mr. Swayne observed to me, was mentioned by Ray (from Meret) calling it, *Gramen cuninum supinum longissimum*; giving as its place of growth, Maddington, nine miles from Salisbury. Ray adds,

* All sorts of cattle eat it. (This is one of the grasses better propagated by dividing and transplanting the roots, in moist weather, (adopted and called *inoculating* by intelligent farmers,) than by sowing seed. Fl. Lond. Mr. Sinclair considers that its diminutive size, and being an annual, preclude the probability of its being worthy of cultivation. It is a most troublesome weed on gravel walks, stone pitchings, &c. It may be overcome by a layer of litter, or the mowings of the lawn, in sufficient thickness to excite fermentation. *Hort. Gram.* E.)

† (This species is said not to bear the frost so well, nor to shoot so early as *P. pratensis*, but grows faster and produces a greater crop of bottom leaves than most other grasses. From a variety of data Mr. Sinclair concludes, that though highly valuable as a permanent pasture grass on rich and sheltered soils, it is but little adapted for the alternate husbandry, and unprofitable for any purpose on dry exposed situations. E.)

that it is twenty-four feet long ; that hogs are fatted with it, and that it also grows in some places in Wales. Ray Syn. Indiculus. Pl. Dub. Mr. Swayne informs me that the part of the meadow in which he found this grass, is in the parish of Maddington, and that Maddington and Orcheston St. Mary are divided only by a small stream.*

* I requested the favour of Mr. Swayne to send me specimens of this celebrated grass, which he was so obliging to do, and also to add the following account of it, which I transcribe with pleasure, as being, I believe, the best yet given to the public:—"The late worthy Edmund Rack, first Secretary of the Bath Agricultural Society, was sent to Orcheston, (as you read in one of their volumes), to investigate this wonderful grass. After his return, he showed me some specimens which he brought back with him, at the same time informing me, that the meadow had been mown before he came there, and that he had picked his specimens from the hay-mow. These were so imperfect, that it would probably have puzzled a skilful Botanist to have determined the species, much less could I pretend to do this. I knew, however, enough to satisfy myself, that it was some species of *Agrostis*. I had thoughts of visiting the place myself for a long time, but the distance of forty miles still made me defer it. At length, being on a visit to a friend in Somersetshire, he told me he had been to see the famous Orcheston grass, that he had been so lucky as to be there at the time the meadow was mowing, had been directed to the real Long Grass by the farmer and labourers at work, and had brought back with him living plants and specimens of the flowers. When he produced the latter, you may guess my surprise to find them specimens of *Alopecurus pratensis* of very large growth. I carried home with me a plant, and set it in my garden. It produced, the spring following, a very fine tuft of the flowering spikes of *Alopecurus pratensis*. This occurrence at once determined me to visit Orcheston, which I did the year following, the first week in June. When I arrived, the greatest part of the meadow, or rather meadows, (for there are several partitions, though the whole is not more than two or three acres,) indeed all, except one corner, about a quarter of an acre, had been mown, and the grass was then lying in small cocks. The standing part had one uniform appearance, and presented a thick and beautiful assemblage of the flowering panicles of what I take to be *Poa trivialis palustris* of Hudson. A specimen shall be sent for your decision. I examined the grass cocks, and no other flowers of grass appeared, except here and there a few spikes of *Alopecurus*. The grass which had not been cut, was lodged, or lying on the ground, and had put forth roots at the knots (geniculi) and began to be erect only at the last knot or two. I was informed that these meadows are mown twice annually, the first time the latter end of May or beginning of June, and the second time the latter end of July or beginning of August. "It will readily occur to you, that no grasses, but those that flower early could be in bloom at the first mowing, and that whatever grasses are in blossom at the last mowing must be of the late flowering kinds. Mr. Davies says, in his Wiltshire Report to the Board of Agriculture, that "Mr. Sole has determined the Orcheston grass to be the *Agrostis stolonifera*, and probably that grass may be predominant, perhaps the only grass in flower, at the time of the last mowing, but I think it can make no part of the first crop."

On the supposition that the grass constituting the great crop of this enviable meadow is at length ascertained, it follows that its great fertility is not merely owing to the kind of grass, for that is not uncommon on the sides of broad wet ditches, and with us begins to flower the first week in June. But it has been observed that the crop in the Orcheston meadow depends much upon the flooding of it in the winter. I will hazard a conjecture, that the advantages of flooding land depend less upon any supposed quality of the water, than upon its temperature. That when brought over the turf soon after it issues from the spring, as is the case at Orcheston, it enjoys a temperature equal to 48 or 49 degrees of Fahrenheit's thermometer, which it communicates to the surface of the meadow and to the roots of the grass, whilst the temperature of the atmosphere may be much lower; so that its action is similar to that of a hot wall upon the branches of fruit trees.

In Linn. Tr. vol. 5, Mr. Maton says, he is satisfied that the Long Grass of Orcheston is not only not a species peculiar to the spot, but that it is composed of most of the species which grow in other meadows, and this certainly appears the most probable solution of the mystery, especially when we consider the peculiarly sheltered

(2) *Panicle slender, compact.*

P. CRISTATA. Panicle spike-like; calyx husks rather hairy, two or three (rarely four) flowered, longer than the fruit-stalk; petals awned, awn-pointed.

(*E. Bot.* 648. E.)—*H. Ox.* viii. 4. 7—*Pluk.* 33. 7—*Leers* 5. 6.

Root rather bulbous. *Straw* about a foot high, curved at the base, above quite straight, upright, smooth, (scarcely smooth upwards. Mr. O. Roberts. *Leaves* short, slender, roughish at the margin and ciliated, glaucous, single-ribbed. E.) *Sheaths* rather smooth. *Panicle* two to four or five inches long, less than half an inch broad, silvery and purplish. *Calyx* two or three-flowered, larger valve awn-pointed. *Blossom*, larger valve tapering into a long slender point, but not properly awned.

CRESTED MEADOW GRASS. (*P. cristata*. Lightf. With. Willd. Relh. Hull. Sibth. Abbot. Leers. Root. Ehr. *Aira cristata*. Linn. Sm. Hook. Grev. Nearly allied to *Aira* by its two-flowered calyx, and acuminate glumes: and in its general characters not much less so to *Festuca*. E.) High barren pastures. On the edge of a marl rock, Clarkton Leap, near Worcester. Stokes. On Wick Cliffs, Somerset. Mr. Swayne. Baydales, near Darlington. Mr. Robson. Henllan Village, near Denbigh. Mr. Griffith. (Broome Heath, near Bungay, Suffolk; and Denes, Yarmouth, Norfolk. Mr. Woodward. On the top of Hod and Hambleton Hills, near Blandford. Pulteney. Painswick Hill, or Spoonbed Hill near Painswick. Mr. O. Roberts. Llangoed above the sea, Anglesey. Welsh Bot. Broadway Hills, Gloucestershire. Rufford, in Purton. In Castle Eden Dean; in limestone pastures near Sunderland; on the Links at Dunstanburgh, Bamburgh, and Holy Island. Mr. Winch. Calton Hill. Grev. Edin. E.) P. July—Aug.*

P. NEMORALIS. Panicle slender, open when in flower; spikets mostly two-flowered, pointed; straw feeble: stipulæ very short, notched. E.)

Scheuch. Pr. 2. 2—(*E. Bot.* 1265—*Hort. Gram.* E.)—*Fl. Dan.* 749—*Scheuch. It.* ii. 18. 3—*Leers* 5. 3—*Mont.* 12.

Nearly two feet high. *Straw* smooth. *Leaves* very slender, just sensibly rough. *Panicle* from two to six inches high, greatly varying also in breadth, and in the number of branches.* *Calyx* generally two, rarely three-flowered, the keel serrulated towards the end. *Blossom* scarcely woolly at the base, but with some very fine, soft, and short wool-like hairs along the keel. Its habit as to strength or feebleness varies very much.

WOOD MEADOW GRASS. (Welsh: *Gweun-wellt y goedwig*. E.) Woods and shady places. Plentiful in the north. Mr. Woodward. Wick Cliffs. Mr. Swayne. (Charlton Wood also, in the south. E. Bot. Not uncommon in the woods of Dorset. Pulteney. Norberry Park, Surry. Mr. Winch. On a bushy bank between Alcester and Arrow. Purton. E.)

P. E. Bot. A. June—Aug.†

situation and rich soil of the valley, and that vegetation in general there assumes a gigantic form. Mr. Maton asserts, that the space of only two acres and a half has yielded as much as ten tons of hay in one year, but that the crops are not now equal to what they were formerly. Vid. *Agrostis stolonifera*. E.)

* (In its general qualities approaches *Festuca ovina*; but cattle dislike its soft hairy foliage. *Hort. Gram.* E.)

† (This grass springs early, producing a fine, succulent, but not abundant, herbage.

(3) *Panicle pointing one way.*

P. RIGIDA. Panicle spear-shaped, compact, somewhat branched; branches alternate, pointing one way; fruit-stalk bordered: (florets about seven, acute, scarcely ribbed. E.)

Curt. 142.—(*E. Bot.* 1371. E.)—*Vaill.* 18. 4—*H. Ox.* viii. 2. 9—*Barr.* 49—*Ger.* 4. 3—*C. B. Th.* 32. 1—*Park.* 1157—*Scheuch.* 6. 2 and 3—*Mont.* 11.

Straw very short and stiff. *Panicle* spear-shaped, inflexible; doubly compound; its branches alternate. *Little spikes* alternate, on inflexible fruit-stalks, which are shorter than the spikes they support; strap-shaped, sharp, about eight florets in each. *Florets* sharp and scariose at the points. *Calyx* keeled. *Linn.* From four to eight inches high. *Straw* smooth. *Leaves* slender, rough. *Panicle* one and a half to near three inches long, quarter to half an inch broad, upright, stiff. This may be distinguished from the other species by the principal or main fruit-stalk being broad on the side opposite to the direction of the branches, convex, and edged with a paler green border. (The whole plant assumes a brown or purplish hue, remaining bleached and dry after Midsummer. Sm. E.)

HARD MEADOW GRASS. (Welsh: *Gweun-wellt anhyblyg.* *P. rigida.* *Linn.* *Glyceria rigida.* Sm. Eng. Fl. E.) Dry sandy or stony places, walls and roofs. St. Vincent's Rocks. Near the mill-pool at Lilleshall, Shropshire. (On limestone hills near Sunderland. Mr. Winch. Arthur's Round Table, and Llangoed, Anglesey. Welsh Bot. E.) A. June—Aug.*

P. PROCUMBENS. Panicle spear-shaped, branches alternate; calyx ribbed, three or four-flowered; straw geniculate.

Plate XXVI.—(*Curt.*—*E. Bot.* 532. E.)

(Whole plant glaucous, rigid; more or less prostrate, affecting circular patches. *Stems* several. E.) four or six inches high. *Straw* geniculate at the upper joint, sheathed up to the panicle. *Leaves* short, broad, ribbed. *Panicle* one and a half inch long, nearly one inch broad. *Calyx* three or four-flowered; outer valve three-ribbed. *Blossom* valves blunt. It has not the bordered fruit-stalk of *P. rigida*.

(**PROCUMBENT SEA MEADOW GRASS.** *P. procumbens.* *Curt.* Sm. Fl. Brit. Hook. *P. rupestris.* With. to Ed. 7. *Glyceria procumbens.* Sm. Eng. Fl. E.) Gathered on St. Vincent's Rocks near Bristol by Mr. Milne, who observed to me, that Mr. Curtis first found it there; just at the entrance into the walk from the Hotwell House. On the waste ground near the dock, betwixt Bristol and the Hotwells; also on the new pier at Scarborough. Sir Thomas Frankland. On a limestone quarry on the coast near Whitburn; also near Hartlepool. Mr. Robson. In the salt marshes of Scotland not uncommon. Mr. Don. Hook. E.)

A. June—Aug.

P. MARITIMA. Panicle compact, branched (erect after flowering. E.); branches in pairs; spikets oblong; florets blunt; leaves sharp, edges rolled in; straw cylindrical, slanting. Huds.

Dicks. H. S.—(*E. Bot.* 1140. E.)—*Fl. Dan.* 251.

Moreover when cultivated it is invariably attacked with the disease called Rust, though when growing wild in woods never so. Hort. Gram. Vid. the nature of Rust further explained under *Triticum lolium*. E.)

* (Retains its verdure in the most arid spots during the hottest summers. It is preferred by hares and rabbits. E.)



Poa (rupestris Ed 6) procumbens.

Root creeping. Straw from six to twelve inches high; smooth. *Leaves* on leaf-stalks, expanding, bare. *Panicle* oblong, the lowermost branches sometimes a little expanding. *Florets* from three to seven or eight; rather blunt, smooth. *Huds.* *Leaves* rolled in so as to resemble rushes. *Panicle* purplish. *Ray.* (*Straw* very much reclining. *Woodw.* Whole plant slightly glaucous. E.) *Panicle* in the fig. of *Fl. Dan.* too much expanded. *Blossom* inner valve very minutely serrulated. Has been supposed to be *Festuca fluitans* changed by a maritime situation; but this is not probable, for the outer and larger valve of the blossom in this plant wants the ribs which are so strongly marked in *F. fluitans*, the inner valve wants the open cleft at the end, besides other differences; I have examined *F. fluitans* whilst growing in the salt marshes at Lymington, and found it vary but little from that growing in inland places. *Azelius* believes it to be *F. adscendens* of *Retz.* (Varying in height from two inches near the sea, to fifteen farther from it. *Rev. H. Davies.* E.)

CREeping SEA MEADOW GRASS. (Welsh: *Guccun-wellt arfor.* E.) Sea coast, frequent. Salt marshes, Norfolk and Yarmouth. Mr. Woodward. On the river side between Bristol and the Hotwells. Mr. Swaney. Near the canal from Droitwich to the Severn. Mr. Baker. North shore, near Liverpool. Dr. Bostock. Shores of Tyne and Wear, near the sea; on rocks at Dunstanburgh Castle. Mr. Winch. Anglesey. Welsh Bot. Isles of Oransea and Skye, and Loch-broom. Lightfoot. E.)

P. June—Oct.

P. COMPRES'SA. (*Panicle* unilateral, rather dense; stem compressed; root creeping; spikets egg-oblong; florets connected by a web.

E. Bot. 365. E.)—*Fl. Dan.* 742—*Vaill.* 18. 5—*Leers* 5. 4—*Mont.* 10.

Florets generally six in each calyx. *Linn.* *Root* somewhat creeping. *Spikets* almost sessile, near together. *Leers.* Much larger than those of *P. pratensis.* *Dickenson.* About a foot high. *Straw* trailing, then ascending, smooth. *Leaves* nearly smooth. *Panicle* two inches long, slender. *Spikets* mostly three or four-flowered. *Blossom* rarely woolly at the base; (and so likewise intimates *Schrader:* though *Sinclair* and other authors suppose it "universal." *Florets* connected at the base by a mass of white folded threads, as fine and soft as a spider's web, which may be drawn out to a considerable length. *Sm.* E.)

(FLAT-STALKED MEADOW GRASS. Walls, house-tops, and other very dry places. P. June.*

(Mr. Sinclair describes a Var. *erecta*, figured, in *Hort. Gram.* Culms more upright, less compressed, and produced in greater quantities. Leaves somewhat glaucous, more upright. E.)

P. GLAU'CA. *Panicle* open: spikets mostly three-flowered: florets tapering to a point, hairy at the base without a web: leaves awl-shaped: (sheath-scales very short. *Sm.* E.)

Fl. Dan. 964—(E. Bot. 1720.

Florets without any complicated web at their base. E. Bot. E.) May be distinguished from other species at a distance, by its glaucous colour. *Vahl.* About ten inches high. *Stem* smoothish. *Leaves* rough at the edges. *Panicle* two inches long, hardly one broad, few-flowered, but little branched, three or four florets in each spiket.

* (Dr. Anderson considers this species more valuable than its congeners. Its leaves being longer and more abundant than those of *P. trivialis*, it better deserves cultivation. Though early and nutritive, the produce is deficient in quantity. *Hort. Gram.* E.)

(GLAUCCOUS MEADOW GRASS. E.) Mountains in the north of England, Scotland, and Wales. P. June—July.*

Var. 2. Leaves broader; florets four or five.

E. Bot. 1719.

P. caesia, Sm. Fl. Brit. Hook. On Ben Lawers, and other Highland mountains. Sm. E.)

(In addition to the preceding species of *Poa*, Prof. Hooker records (from the report of Messrs. Don) *P. stricta*. Panicle branched, spikets of three flowers, ovate; cal. glumes, lanceolate, three-nerved, nearly equal, mucronated, keeled; florets five-nerved, truncated at the apex, villous at the base. Pastures in Angus-shire. *P. leptostachya*. Panicle contracted, somewhat racemed; pedicels very short, glabrous; spikets, two-flowered; cal. glumes lanceolate mucronate, equal, three-nerved, incurved at the extremity; florets lanceolate, rather acute at the point. Banks of the Tay west of Dundee. Said to be totally distinct from any other British *Poa*. To these novelties we would attract the attention of northern tourists. E.)

(TRIO'DIA.† Bloss. orbicular, expanded, obscurely ribbed, deeply cloven, with an intermediate point; both valves concave. Seed loose, depressed. E.)

(T. DECUMBENS. Panicle nearly simple, close, erect: florets four, their middle tooth shortest: calyx smooth: stipula hairy. Sm.

Dicks. H. S.—E. Bot. 792—Fl. Dan. 162—Leers 7. 5—Pluk. 34. 1—H. Or. viii. 1. 6—Mont. 2. 1—Scheuch. 3. 16. A, B, C.

Whole plant harsh and rigid, lying close to the ground except when in flower. Stem twelve to eighteen inches long, jointed, very smooth. Leaves striated, rather glaucous, rough towards the points. Sheaths hairy, especially at the top. Panicle of a few large, turgid, purplish spikelets, its branches few, wavy. Bloss. has two, or more, dense tufts of shining bristles at its base, with two intermediate depressions. Middle tooth not extended into a bristly awn. Sm. Habit very different from *Poa*. Hook.

DECUMBENT HEATH GRASS. Welsh: *Gweunweilt gorweiddiog* *Festuca decumbens*. Linn. Huds. Dicks. Willd. *Poa decumbens*. With. Sm. Fl. Brit. Schrad. Hook. *T. decumbens*. Br. Sm. Eng. Fl. In bogs, or barren moist pastures, not unfrequent. Toxteth Park, near Liverpool. Dr. Bestock. In Norfolk and Suffolk frequent. Mr. Woodward. On Gateshead Fell, and on Newcastle Town Moor. Mr. Winch. Braid and Pentland Hills. Grev. Edin. E.) P. Aug.‡

BRIZA.‖ Cal. two-valved, many-flowered. Spiket two-rowed (Bloss. ventricose; E.) valves heart-shaped, blunt, the inner minute. (Seed depressed, attached to the blossom. E.)

B. MINOR. Spikets triangular: calyx longer than the florets.

* (A grass of inferior merit, not to be recommended to agriculturists Hort. Gram. E.)

† (From τρις, τρια, and οδους, a tooth; alluding to the three teeth of the blossom. E.)

‡ (But little susceptible of improvement. It is late in the production of its foliage, and yields little after-grass. Hort. Gram. E.)

‖ (From βριζω, to nod; alluding to the pendulous or nutant position of the blossoms. E.)

Dicks. H. S.—(*E. Bot.* 1316. E.)—*Kniph.* 8—*H. Ox.* viii. 6. 47—*Barr.* 16—*Park.* 1165. 5.

(*Straw* erect, cylindrical, a span high, very smooth, leafy, often branched at the base. *Leaves* sheathing the stem, upright, spear-shaped, acute, flat, pale green, scored, rough at the edge. *Sheath-scale* spear-shaped, very long, embracing the stem. *Fl. Brit.* E.)

SMALL QUAKING GRASS. In pastures, (very rare; only found in the south of England. E.) (*Near Bath.* Mr. Alchorne. *Huds.* At Bocconnoc, Cornwall. Mr. E. Forster, jun. in *Bot. Guide.* St. Vincent's Rocks. Mr. Dyer. ditto. E.) Plentifully near Penzance. A. June—July.

B. MEDIA. Spikets egg-shaped: calyx shorter than the florets.

Gram. Pasc.—*Dicks. H. S.*—(*Hort. Gram.* E.)—*Fl. Dan.* 258—(*E. Bot.* 340. E.)—*H. Ox.* viii. 6. 45—*Trag.* 670—*Barr.* 16. 2—*Ger. Em.* 86. 2—*C. B.* 22 1—*Park.* 1165. 2. 6—*J. B.* ii. 469. 2. 6—*Leers* 7. 2—*Scheuch.* 4. 8—*Mont.* 39—*Dwarf specimens.* *C. B. Th.* 25. 1—*H. Ox.* viii. 6. 46—*J. B.* ii. 469. 2—*Scheuch.* 4. 9.

(*Straw* a foot high or more, upright, cylindrical, leafy, very smooth. *Leaves* sheathing the stem, nearly upright, spear-shaped, acute, flat scored, somewhat rough. *Florets* about seven, in two ranks. *Fl. Brit.* An extremely elegant plant. *Panicle* slender and tremulous, tinged with purplish brown. E.)

Should any difficulty remain in determining these two species from the Linnæan character, it may be observed, that in *B. media* the inner valve of the blossom is finely fringed at the edges, but entire at the end, whilst in *B. minor* it is not fringed at the edges, but cloven at the end.

COW-QUAKES. LADIES'-HAIR. COMMON QUAKING GRASS. (Welsh: *Eigryn*; *Gwynith ysgyffarnog.* "*Gramen tremulum*," of the ancients, from its tremulous panicle. *Amourette* of the French. E.) Fields and pastures. P. July.*

DACTYLIS.† (*Bloss.* awn-pointed, spear-shaped, keeled, compressed; inner-valve folded, two-ribbed. *Seed* detached, oblong. *Cal.* compressed, taper pointed, unequal. E.)

D. GLOMERATA. Panicle crowded (in dense tufts. E.), pointing one way.

Gram. Pasc.—*Schreh.* 8. 2—(*Hort. Gram.*—*E. Bot.* 335. E.)—*Fl. Dan.* 743—*H. Ox.* viii. 6. 38—*Bauh. Pr.* 9. 1, and *Th.* 45. 1—*Mus. Rust.* v. 1. 5—*Park.* 1182. 5—*J. B.* ii. 467. 1—*Barr.* 26. 1. 2—*Leers* 3. 3—*Scheuch.* 6. 15.

Florets in rainy seasons sometimes viviparous. Wood. (*Leaves* strap-shaped, acute, expanding, long, of a dull green colour, scored, rough, chiefly at the edge. *Florets* three or four, seldom only one, larger than the calyx, five-ribbed, sharp-pointed, with the keel fringed. *Fl. Brit.* E.)

* Cows, sheep, and goats eat it. If a seed be carefully dissected in a microscope with a fine lancet, the young plant will be found with its roots and leaves perfectly formed. A grass of no value as a pasture grass, but only as it grows on such wet parts as better grasses would not grow on, such places should be drained and manured, and then the herbage would soon be changed. Rev. G. Swayne. (It is bitter to the taste. Salisbury. Mr. Sinclair states it to be most suitable for poor soils, and that manure is even injurious to it. E.)

† (From δακτυλος, a finger; the cluster of spikes somewhat resembling fingers. E.)

Stem compressed, and aided by the sheaths of the leaves, appears to be two-edged; especially in the stronger plants, (about two feet high. *Anthers* violet, pendulous. E.)

(ORCHARD GRASS, ROUGH COCKSFOOT GRASS. Welsh: *Byswells gurwaidd*. Very common in meadows, orchards, and shady pastures. E.)

P. June—Aug.*

(SPARTINA.† *Cal.* of two spear-shaped, compressed, clasping valves. *Bloss.* of two compressed, rather unequal, spear-shaped valves. *Nect.* none: *Seed* detached. *Styles* combined. E.)

(S. STRICTA. Spikes two or three, erect, with very smooth stalks: glumes downy: outer valve of the calyx smallest. Sm. E.)

PLATE XXVII.—(E. Bot. 380. E.)

(In salt marshes near Aldborough, Suffolk, which are exposed to the flux and reflux of every tide, this grass frequently covers extensive patches, to the exclusion of almost every other plant. In these places I have examined thousands of specimens without ever finding more than two spikes, which are so closely adpressed, as to have the appearance of a single spike. One is always longer than the other, and flowers first, and on the going off of those flowers, the lower spike pushes out its anthers. The straw has often a dark reddish cast, and the whole plant a blackish hue, by which the patches before mentioned may be distinguished at a considerable distance. The lower part of the culm terminates in a sort of bulb, from which the fibres forming the root issue. Wood. E.) About a foot high. Straw curved at the base, upright above, smooth, sheathed

Thrives in the shade and under the droppings of large trees. Rat^h coarse but very productive, especially in leaves, and is not disliked by cattle, unless when growing on rank soils. Rev. G. Swayne. (An useful plant for filling up the dearth experienced by graziers, from the time turnips are over until the meadows are fit for grazing. Every sheep-farm should be provided with a due portion, but it must be kept closely eaten down, as scarcely any animal will feed on it when old, or when dried. Salisbury. Mr. Sinclair testifies more particularly to its merits.—“It is deserving of especial notice, that the herbage of this grass, when suffered to grow rank or old, from want of sufficient stocking, contains nearly one-half less nourishment than that which is of a recent growth. Hence this grass is more valuable for pasture than hay; yet, even for the latter purpose, it will be found superior to rye-grass (*Lolium perenne*), and many other grasses. To reap the full benefit of its superior merits as a pasture-grass it should be kept closely cropped, either by cattle or the scythe. Oxen, horses, and sheep, eat this grass readily: I have observed oxen eat the culms and flowering heads, until the time the seed was perfected. It succeeds best where the subsoil is porous and not stagnant: the fibrous root then penetrates to a considerable depth, and the plant is productive in an extraordinary degree, and remains permanent. In the finest fattening pastures of Devonshire, Lincolnshire, and the vale of Aylesbury, this grass constituted a portion of the herbage, but was not to be detected by the tufy and coarse appearance which it assumes when cultivated singly, or unskilfully depastured. It was originally introduced from Virginia as Orchard-grass, by the Society of Arts. It is less impoverishing to the soil than Rye-grass. A combination of three-parts Cock’s-foot, and one part composed of *Festuca duriuscula*, *F. pratensis*, *Poa trivialis*, *Holcus avenaceus*, *Phleum pratense*, *Lolium perenne*, and white clover, in smaller proportion, will secure the most productive and nutritive pasture in alternation with grain crops. E.)

† (From *Spartum*, a kind of broom or hard-grass, used by the ancients for economical purposes. E.)



up to the spike. *Leaves* sheathing, smooth, stiff, taper, three or four on each straw. *Spikes* one, two, or three, smooth; three inches long, less than half an inch broad. *Florets* pointing one way. *Calyx* one-flowered, keel-shaped, doubled together, hairy, unequal, sessile in a hollow of the spike-stalk. (Whole plant rigid, tough. *Spikes* imbricated in two rows, lateral, lanceolate. *Styles* combined about three-fourths of their length. Sm. E.)

TWIN-SPIKED CORD-GRASS. (*D. Cynosuroides*. With. Ed. 2. E.) Huds. &c. *D. stricta*. With. Ed. 6. but not of Linnaeus. Sm. Fl. Brit. Willd. *Spartina stricta*. Schreb. Sm. Eng. Fl. Marshes in Essex, and other parts of the sea coast. Near Aldborough, Suffolk. Mr. Woodward. Near the mouth of Feversham Creek. Col. Velley. (In the Isle of Sheppey, plentifully. Rev. Dr. Goodenough. Fl. Brit. E.) P. Aug.—Sept.

CYNOSURUS.* (*Cal.* two-valved, awned, many-flowered; equal: *Bloss.* two-valved, one valve concave, awned *Vect.* two-leaved: *Seed* detached. E.)

C. CRISTATUS. (*Spike* simple, strap-shaped E.) *Floral-leaves* with winged clefts.

Gram. Pa. r.—Schreb. 8. 1—(*Hort. Gram.*—*E. Bot.* 316. E.)—*Leers* 7. 4—*Gisek.* 51—*Fl. Dan.* 238—*Barr.* 27. 2—*Mus. Rust.* iv. 2. 2—*H. Or.* viii. 4. row 7. 6—*C. B. Th.* 43—*Park.* 1160. 3—*Anderson*—*Stillingf.* 11—*J. B.* ii. 468. 3.

(*Stems* several, twelve to eighteen inches high. *Spike* erect, rigid, two inches long, with a wavy, rough stalk. *Anthers* purple, pendulous. Sm. E.) *Floral-leaves* deeply divided into awl-shaped segments. *Husks* generally containing three florets. *Smaller valve* of the blossom ending in two points; *larger valve* ending in a short awn. *Florets* all facing one way, sometimes purple. *Seeds* rough, with very strong short bristles.

CRISTED DOG'S-TAIL GRASS. Welsh: *Rhon-wellt y ci crihrog*. Common in dry pastures. E.)†

* From *κυνος*, a dog, and *ουρα*, a tail; the spike resembling a dog's tail. E.)

† The leaves of this grass are shorter than those of any other pasture grasses; but they grow very close together in great abundance, and are palatable to cattle, particularly to sheep. It is, therefore, proper to be sown in fields intended for sheep-walks, but by no means as a meadow or hay-grass. The straws are remarkably hard and tough, and as they shoot up at a season when the leaves of all the grasses are very plentiful, they are not cropped by cattle, but are suffered for the most part to perfect their seeds, which afford a scanty subsistence to pigeons at a season when their food is very scarce. Rev. G. Swayne. (The roots penetrate to a considerable depth; it, therefore, retains its verdure after most other grasses are injured by dry weather. Mr. Sinclair has found it more abundant in tenacious elevated soils, than in those of a drier or more sandy nature. In irrigated meadows it thrives to perfection, attaining an unusual size. It is not calculated for alternate husbandry, but forms a close, dense turf, a sward of the best quality, especially for sheep. Hort. Gram. *Hipparchia Pamphilus* is found on this species.)

It appears that the culms of several kinds of perennial British grasses yield a material for the manufacture of plat for Leghorn bonnets and hats, superior even to the Italian straw: *Poa pratensis*, *Avena pratensis*, *Festuca ovina* var. *hordeiformis*, and *Nardus stricta*, have been proved particularly suitable; but none more so than *Cynosurus cristatus*; for a bonnet of which, and equal in texture and colour to those imported, the premium of the large silver medal has been awarded by the Society of Arts. The only portion of the straw selected for this purpose, is the part between the upper joint and the panicle. (An admirable provision of nature has been detected in the additional strength afforded to these slender supporters of the ripened seed or grain, by the infusion into their composition

Var. 2: Spike four-cornered. Ray. Syn. 399.

Pastures, common.

P. June—July.

(Var. 3: Spike viviparous. Observed by Mr. Brown in the King's Park, Edinburgh, Nov. 1791; and by Sir Thomas Frankland in a pasture in Yorkshire; the plant being remarkably strong, Sir Thomas is led to suppose the above effect may be occasioned by unusual vigour. In wet seasons Mr. Sinclair finds it generally viviparous under trees in Woburn Park. Mr. Davies likewise in Anglesey. E.)

C. ECHINATUS. (Spike compound, egg-shaped. E.) Floral-leaves winged; segments awned.

(E. Bot. 1333. E.)—C. B. Th. 59—Park. 1168. 6—H. O.E. viii. 4. 13—Barr. 123. 2—J. B. ii. 474. 1—Scheuch. 2. 8. B. D—Mont. 24.

Bunch congregated, pointing one way. Floral-leaves only on the outside of the flowers, alternately winged, the rays ending in awns; one floret in each. Husk two-valved, two-flowered, membranous, very fine at the point. Blossom two valves, with an awn upon the outer point. Style cloven. Linn.

The distinction of these two species may be assisted by remarking, that in the former the florets form a compact strap-shaped spike, from two to four inches long, and from a quarter to half an inch broad, but in this

of an extra portion of siliceous particles, which likewise is supposed in some degree to occasion the glossy appearance of these parts of the plant. E.) The culms should be gathered in a green state, about the time of flowering, being then both tougher and more solid than when in more advanced maturity. The processes of splitting or cutting, scalding with hot water, bleaching, either by continued exposure to the sun, or, in a more summary manner, by the cautious application of sulphuric acid gas, are now well understood. The expence of cultivating any single species of these fine grasses (from weeding to keep out others), would scarcely repay the speculation; Mr. Sinclair, therefore, advises that several of the proper kinds, which come into flower at the same period, and affect similar soils, should be sown together. The manufacture of British Leghorn is worthy the patronage of the fashionable world; and under such auspices might become an object of almost national importance, as affording an unobjectionable employment, not merely to women and children, but also to the aged and infirm, in their cottages, or in the fields; and, therefore, in a moral point of view, far less deteriorating than the crowded and over-heated apartments of larger establishments. In the Oranys more than a thousand people are thus employed. The object of the present essay is to assist such employment in that highly commendable

ery

on high and exposed situations in most parts of England, but no where more so than on Lansdown, and other eminences around Bath, which are often white over with the exsiccated rufus of this species. The occupier of Cheney Court, near Box, can give valuable information on this subject, which may likewise be obtained at the manufactory, Lansdown-road, Bath, where we have seen hats and bonnets of the most delicate texture, fully equalling in beauty and durability, the foreign Leghorn, but, from the tediousness of their preparation, not less expensive. We venture, however, to suggest, that several of the processes, and those among the least wholesome for manual operation, might be greatly facilitated by the application of the steam-engine; and we would further submit to the consideration of those best capable of deciding, whether the very inconsiderable power requisite for such purpose, might not be abstracted from engines on board steam-packets, without impeding progress, and be thus occasionally, and profitably applied, by leisure hands? For particulars respecting the British Straw Hat, consult "Reports of the Society for bettering the Condition of the Poor;" "Sinclair's Hortus Gramineus Woburnensis;" and "Cobbett's Cottage Economy." E.)

they form a spear-shaped bunch, whose breadth at the base is equal to about half its length.

(*Spike* dense, distinguished by the elegantly pectinated neuter *spikets* at the back, and bristly with the long rough *awns* of the perfect ones in front. Sm. E.)

ROUGH DOG'S-TAIL GRASS. Sandy soil near the sea in the south of England. Near Sandwich. (Near Hastings, but very sparingly. Rev. Dr. Goodenough. Fl. Brit. St. Anthony's Ballast Hills, near Sunderland. Mr. Thornhill. Bot. Guide. A. June. E.)*

FESTUCA.* *Cal.* two-valved, very unequal: *Spikets* oblong; roundish: *Husks* tapering to a point, or terminating in an awn: (*Seed* detached. E.)

(1) *Panicle* pointing one way: *awns* longer than the blossom.

F. BROMOIDES. *Spikets* upright, smooth: calyx valves, one entire, the other tapering to an awn-like point: (leaves setaceous, shorter than their sheaths: upper half of the stem naked. E.)

(E. Bot. 1411. E.)—*Pluk.* 33. 10—*Scheuch.* 6. 10 and 14.

Panicle broader and shorter than in *F. myurus*; the *spikets* also larger and broader. *Straw* with three or four joints. Ray.* Few plants vary more in size than this: in very dry sand on the sea shore it is sometimes only two inches high, as represented in the fig. of *Plukenet*: in more fertile soil sixteen inches or more. *Straw* and *leaves* smooth. *Panicle* loose, about three inches long. *Spikets* from five to ten-flowered, but commonly six. *Calyx*, smaller, valve hardly half the length of the other. *Blossom* valves smooth. *Awns* twice the length of the blossom, or more.

BARREN FESCUE GRASS. (Welsh: *Peisg-wellt unhliliawg.* E.) On walls and dry sandy places. On the top of Brandon Hill, near Bristol. Mr. Swayne. Dry pastures near the Mass-house, Edgbaston, Birmingham. (Near Bedford. Rev. Mr. Hemsted. E. Bot. About Aberdeen and the banks of the Dee. Mr. Anderson. Frequent on walls about Edinburgh. Dr. Yule. Hook. Scot. Anglesey. Welsh Bot. E.) A. May—June.

F. MYURUS. *Panicle* spike-like, drooping: calyx, smaller valve very minute: florets rough, awns very long: (leaves awl-shaped: stem leafy to the top. E.)

Dicks. H. S.—(E. Bot. 1412. E.)—*Leers* 3. 1—*Barr.* 99. 1—*H.* O. v. viii. 7. 43—*Scheuch.* 6. 12—*Ger. Em.* 29. *2—*Park.* 1162. 8.

(Much resembling the last, but larger; the *panicle* four times as long. Sm. E.) About sixteen inches high. *Panicle* five or six inches long, slightly curved. *Spikes* from four to eight or ten-flowered. *Calyx* very unequal,

* (In corn-fields this grass attains to a considerable height, but it has been detected on rocks extremely diminutive. "Though a grass like this," observes Mr. Sinclair, "may be of comparatively little or no value to the farmer, it is, surely, not unworthy of regard; for, independently of the pleasure which a consideration of its peculiar structure, design, uses, and connexion with others of known value must excite, a knowledge of the plant will also direct whether to encourage or prevent its growth." E.)

* (*Festuca*, a Latin word expressive of the shoot of an herb or tree, adopted by Dillenius; but how particularly appropriate to this genus is not obvious. E.)

the smaller valve hardly one-sixth the size of the larger. *Blossom* valves rough. *Awn* full twice the length of the blossom. (*Stamen* only one. It varies occasionally with husks hairy. Fl. Brit. E.)

WALL FESCUE GRASS. CAPON'S-TAIL GRASS. (Welsh: *Peisg-wellt y fagwyr*. E.) Walls and dry barren places. A. May—June.*

(F. UNIGLU'MIS. Panicle pointing one way, upright, undivided: florets awl-shaped, compressed, awned: one valve of the calyx very short.

Dicks. H. S.—E. Bot. 1430. E.)—*Ray* 17. 2.

From six to twelve inches high; slanting, cylindrical, smooth, a little branched. *Leaves* a little rolled inwards, sharp, naked, much shorter than the leaf-stalk. *Sheath-scale* membranous, rather blunt. *Spikets* on fruit-stalks, strap-shaped; florets from four to eight in each. *Fruit-stalks* short, thick, rough. *Husk* one valve, strap-shaped, concave, awned. *Blossom* two-valved, unequal. *Outer valve* larger, strap-shaped, keeled, awned, rough. *Inner valve* smaller, flat, strap-shaped, awnless. *Awn* twice the length of the floret. *Huds.* Upper florets barren; inner husk of the calyx whitish, and so exceedingly minute as to be scarcely discernible by the naked eye. Fl. Brit. E.)

WILD OAT GRASS, or DRANK. SEA DARNEL. SINGLE-HUSKED FESCUE GRASS. (Welsh: *Peisg-wellt uncib*. E.) *Lolium bromoides*. With. Ed. 4. Sea coasts, in loose sand. In Essex, Sussex, and other maritime counties. With *Arundo arenaria* on the south-west coast of Anglesey. Rev. H. Davies. A.—B. June. E.)

F. GIGANTEA. Panicle drooping: spikets four-flowered, shorter than the awns: (stipula abrupt, auricled, clasping the stem. Sm. E.)

Curt. 344—(*E. Bot.* 1820. E.)—*Schreb.* 11—*Leers* 10. 1—*Fl. Dan.* 440—*Vuill.* 18. 3—*Scheuch.* 5. 17 and 19—*Weig.* 1. 5.

Four or five feet high. *Leaves* half an inch broad. *Sheath-scale* purple; by which alone it may be distinguished. *Panicle branches* in pairs, subdivided. *Calyx-valves* keeled, slender, tapering to a point, from three to six-flowered. *Blossom* not ribbed, nor hairy. *Awns* full twice the length of the blossom.

(The inner valve of the blossom being merely finely downy, even under the microscope, decidedly not pectinated or coarsely ciliated, as in *Bromus*, has induced the removal of this plant from that genus to *Festuca*, though its general habit partakes of the former.

Var. 2. More delicate, paler, and narrower-leaved; about two feet high, with the number of florets variable.

E. Bot. 1918—*Fl. Dan.* 440.

Admits of no permanent specific distinction. *Bromus triflorus*. Linn. Willd. Sm. Linn. Tr. *F. triflora*. Sm. E. Bot. With. Ed. 6. *F. gigantea* β. 'Hqok. Scot. Sm. Eng. Fl. A dwarf variety, found in arid, barren ground, as Hinton Moor, Cambridgeshire. Rev. R. Relhan. On the banks of the Esk, near Forfar. Hooker. At Saham, Norfolk. Mr. Crowe.

* (Birds appear to be very fond of the seeds. The plant is unprofitable to the agriculturist. Hort. Gram. E.)

TALL FESCUE GRASS. *Bromus giganteus*. Linn. Huds. With. Curt. Willd. Schreb. Leers. *F. gigantea*. Villars. Sm. Hook. Grev. In woods and moist hedges. P. July—Aug. E.)*

(2) *Panicle pointing one way: awns shorter than the blossom.*

F. OVINA. Panicle compact, awned: straw quadrangular; almost naked: leaves bristle-shaped: (florets cylindrical, pointed or awned; smooth at the base, and at the edges of the inner-valve: stipula short and obtuse. Sm.

E. Bot. 585—*Hort. Gram. E.*)—*Mus. Rust.* iv. 2. 4—*Leers* 8. 3.

From five to eight inches high, but twice as tall when cultivated. *Panicle* one and a half to two inches long, mostly pointing one way. *Spikets* from three to five-flowered, generally four, and an imperfect rudiment of a fifth. *Calyx* one valve only three-quarters the length of the other. *Awns* of various lengths, but generally about one-sixth the length of the blossom

(Var. 2. Panicle more purple; that colour sometimes extending to the leaves and straw. Plant considerably larger.

F. rubra. With. Ed. 6. not of Linn. *F. ovina* β. Sm. On the coast near Whitburn, Durham; also at Hartley and Holy Island. Mr. Winch. About Stony Cross, in the New Forest. E.)

(Var. 3. Chiefly distinguished by its viviparous habit, which has been proved to continue invariable for years in a garden. E.)

E. Bot. 1355.

(Mr. Sinclair states, “ I have cultivated this grass on a variety of soils, and never could obtain a floret with either stamen or pistil. The germen, or rudiment of the future plant, in its first stage, appears like a minute globule of water, visible only with the microscope; after the spike is developed, it gradually assumes an oblong figure, becomes pointed, and at last puts forth a single leaf, after the manner of the perfect seed of grasses; other leaves succeed to this, till the weight of these, now a perfect plant, except the root, forces it to fall from the spike on the ground, where it soon strikes root. This is a curious exception to the general law of nature, in the propagation of plants by seed. Here is a plant which has every part of a flower, except the two essential parts, stamens and pistils, for its propagation, and for its admission into this class of the system of Linnæus. Yet, from this imperfect flower, it produces perfect plants. In other viviparous grasses, the seed is first perfected, and merely vegetates in the husk from accidental circumstances, as growing in shaded places, and from long continuance of moist warm weather.”

Welsh: *Peisg-wellt byrhiliog*. * *F. ovina* β. Linn. Willd. Hook. Salisb. *F. ovina*, Var. 4. With. Ed. 4. *F. vivipera*. Sm. With. Ed. 6. Sinc. Natural to alpine situations; as on Ingleborough, Skiddaw, Snowdon, and most of the Scottish mountains. Fl. Brit. On High Street, the highest hill in Westmoreland. Mr. Gough. In a field called Cae Graeanog, Dinamemesne, Anglesey. Welsh Bot. By the fall of Low-dore, Keswick. E.)†

* (A coarse grass. The seeds are acceptable to birds. *Hort. Gram. E.*)

† (From trials that have been made, it appears to have no excellence for agricultural purposes. Sinclair. E.)

(Var. 4. Herbage and glumes exhibit a glaucous hue, unchanged by culture.

E. Bot. 1917.

F. casia. *E. Bot.* *F. ovina* γ. *Sm. Eng. Fl. E.*)

(Var. 5. Awnless: more slender in every part; the leaves much longer. Spikets smaller, green, acute.

Leers 8. 4—*Pluk.* 34. 2—*Mont.* 4—*Anderson—Scheuch.* 6. 6.

F. tenuifolia. *Sibth. With. to Ed. 7. Schrad. Gramen capillacum locustellis pennatis, non aristatis.* *Ray* 410. *F. ovina* β, *muticu.* *With. Ed. 2. F. ovina* β. *Leers. F. ovina* δ. *Sm. Bullington Green, Oxfordshire. Sibthorpe. Crib y Ddescil, Denbighshire; and on the rocks between the two pools at Capel Curig. Mr. Griffith. At Prestwick Carr, Northumberland. Mr. Winch. E.)*

(SHEEP'S FESCUE GRASS. *Welsh: Peisg-wellt y defaid.* *E.*) Dry gravelly soil, and on stone walls. *P. June.**

(*Sinclair, in Hort. Gram.* describes a variety which seems likely to prove an acquisition to the agriculturist. He denominates it *F. ovina hordeiformis*, *Long-awned Sheep's Fescue*. Panicle compact, branches subdivided, upright. Spikets crowded, six to ten-flowered. Root-leaves thread-shaped, stem-leaves very long. See *Pl. in Il. G. E.*)†

F. DURIUSCULA. (Panicle unilateral, spreading; florets longer than their awns: stem cylindrical; stem-leaves flat, root fibrous. *Sm.*

Gram. Pasc.—(Hort. Gram.—E. Bot. 470. E.)—Ray 19. 1—*Leers* 8. 2.

(Much resembling *F. ovina*, but generally twice or thrice its size; spikets large, but varying as well as the pedicels in roughness and pubescence, often smooth. *Lower-leaves* complicate. *Colour* of the plant generally glaucous green; spikets more or less tinged with red. About eighteen inches high. *Hook. E.*)

Var. 2. Outer valve of the corolla, not the calyx, is finely downy.

Fl. Dan. 700.

F. duriuscula β. *Huds. Sm. Schrad. F. dumetorum.* *Linn. With. Willd. E.)*

HARD FESCUE GRASS. *Welsh: Peisg-wellt caledaidd.* *E.*) In pastures, dry meadows, and thickets. Walls of Dudley Castle, *Worcestershire.* Flat pastures in *Somersetshire*, about Highbridge. (Spoonbed Hill, near *Painswick. Mr. O. Roberts. Anglesey. Welsh Bot. E.) P. June.†*

* It flourishes best in a dry sandy soil: cows, horses, and goats will eat it, but it is the favourite food of sheep; they prefer it before all other grasses, and are said soonest to grow fat upon it; for, though small, it is succulent. The Tartars, who lead a wandering life, tending their flocks and herds, always choose those spots where this grass abounds. *Linn.* Such may be its just character in the uncultivated wilds of nature, and as it prefers a dry soil, its growth is an indubitable indication of the salubrity of such places for flocks of sheep; but in a more rich and cultivated country, *Mr. Swayne* tells me it is of little value as a pasture grass, being extremely diminutive, nor will it remain long in the ground if sown, but will soon give place to more luxuriant grasses. (The smallness of the produce renders it entirely unfit for hay. *Sinclair. E.*)

† (This kind of Fescue is superior to most others in the produce of early, fine, tender, and succulent herbage in the spring; and decidedly, so to the common sort of *F. ovina*. The culms are well adapted for the manufacture of the finest straw-plat, being very distant in the joints, and of an equal thickness throughout. *Hort. Gram. E.*)

‡ A very excellent grass for the agriculturist, springing very early, being productive and grateful to all kinds of cattle, and found in most good meadows and pastures. *Rev. G. Swayne.* (In its native state of growth, no grass stands dry weather better, or makes a more firm sward. Excellent both for green fodder and hay, it is well worth cultiva-

(*F. RUBRA*. Panicle unilateral, spreading: florets longer than their awns: leaves downy on the upper side, more or less involute: root extensively creeping.

E. Bot. 2056—*Stillingf.* 9—*Scheuch.* 6. 9.

Root often extending, on the sea coast, to many feet, or even yards, in length. A chief inducement with Smith, Schrader, and Sinclair, to consider this plant a species. Upper leaves broader also than *F. duriuscula* (with which it has been assimilated by Hooker), and yet rather involute than at any time compressed; their upper side furrowed and downy; the under smooth. Panicle often a little glaucous. Florets more or less downy. Sm.

We cannot but entertain great doubts of the propriety of this arrangement.

Var. 2. Distinguished by the pale green colour of its panicle and culm.

Hort. Gram.

F. Cambrica. Huds. With. to Ed. 7. *F. rubra* β. Sm. On the highest hills about Llanberris, plentifully; and on Crib y Ddresil. Mr. Griffith.*

Var. 3. Perhaps not to be distinguished even as a permanent variety from the preceding. Sinclair describes it as having awns longer, panicle branches and spikets smoother; spikets shining, root scarcely creeping, root-leaves much longer.

Hort. Gram.

F. glabra. Lightf. With. to Ed. 7. *F. rubra* γ. Sm. Found at Ardbigland, in Galloway, by Mr. Lightfoot.

Var. 4. Glaucous. *F. glauca*. Winch Guide 1102. *F. rubra* δ. Sm. On the sea-coast of Northumberland and Durham.

CREeping FESCUE GRASS. Welsh: *Peisgwellt ymdanawl*. *F. rubra*. Linn. Sm. Willd. Schrad. *F. duriuscula* β. Hook. In mountainous pastures, on alpine precipices, and sandy sea-coast, both in England and Scotland. P. July. E.)

(*F. PRATEN/SIS*. Panicle diffused, branched; spikets strap-shaped, many-flowered; florets cylindrical, awnless; nectary four-cleft; root fibrous.

Gram. Pasc.—*Curt.*—*Hort. Gram.*—*B. Bot.* 1592—*Mus. Rust.* iv. 2—*Scheuch.* 4. 6.—*Leers* 8. 6.

ting. Salisourv. Mr. Sinclair describes it as one of the best of the fine or dwarf-growing grasses, and says it attains to the greatest perfection when combined with *Festuca pratensis* and *Poa trivialis*. Hares prefer it to many other grasses. When cultivated on poor siliceous, or thin heath soil, the culms become very fine and slender, and promise to be valuable to the straw-plat manufacturer. As affording a strong example of the persevering endeavours that plants exert to maintain existence, is the peculiar appearance of the present species, gathered on the Malvern Hills, (see Pl. iii. in the Journal of a Naturalist), and which, as therein described, having been constantly eaten down by cattle, has never thrown up flowering stems, giving out only radicle leaves. These appear to have been cropped short as soon as they have sprung up, the less succulent and strawy portions only being left, like a ball upon the surface, as a bush constantly clipped by the gardener's shears. The root appears to have annually increased, though the upper parts it was destined to nourish have been destroyed, until it became a lock of closely compacted fibres, like a tuft of hair, six or eight inches in length. Vide also *Ulex europæus*, as presenting a like appearance with these grass balls. E.)

* (This grass is much inferior to *F. duriuscula*, both in the quantity of produce, and in nutrient qualities. *Hort. Gram.* E.)

Stems numerous, one to two feet high, smooth, leafy. *Leaves* spreading, strap-shaped, acuminate; those of the stem rough on both sides. *Panicle* inclining one way. *Spikets* compressed, not very numerous. Inner valves of the blossom pubescent at the margin; outer purplish.

MEADOW FESCUE GRASS. *F. pratensis*. Huds. Curt. Sm. Hook. Grev. Sinc. *F. elatior*. Linn. Fl. Suec. Schreb. Leers. *F. elatior*, var. 2. With. to Ed. 7. Rich pastures and irrigated meadows. P. June. E.)*

(*F. ELA'TIOR*. Panicle diffuse, very much branched; spikets egg-spear-shaped, many-flowered; florets cylindrical, scarcely awned; leaves strap-spear-shaped; root creeping.

Curt.—*E. Bot.* 1593—Schreb. 2—Scheuch. 5. 18—Villars 4.

Twice or thrice as large as the preceding; in habit much resembling it. Outer valve of the blossom invariably sharp-pointed, sometimes having a short awn inserted below the point.

TALL FESCUE GRASS. DOVER GRASS. Sherard. Welsh: *Peisg-wellt hydus*. *F. elatior*. Linn. Sp. Pl. Curt. With. to Ed. 7. Sm. Hook. Grev. Sinc. *F. arundinacea*. Schreb. Villars. *Bromus littoreus*. Willd. In moist meadows, sides of ditches and ponds, or in osier-holts, but not so common as *F. pratensis*. P. June—July. E.)†

(*F. CALAMA'RIA*. Panicle pointed one way, upright, very much branched, compact: florets oblong, angular, awnless: leaves sword-shaped, scored. Sm.

E. Bot. t. 1005.

Straws numerous, upright, three feet high, reed-like, stiff, cylindrical, striated, very smooth, leafy; contracted, and purplish at the joints. *Sheath-scales* rather short, blunt, as if bitten. *Panicle*, for the size of the plant, small, many-flowered. *Florets* three to five, two-rowed, distant; *hulks* nearly equal, convex, spear-shaped, sharp-pointed, awnless, membranous, compressed and keeled; *keel* slightly rough. *Anthers* strap-shaped, yellow. The outer valve of the florets largest and keeled; the inner with two ribs often folded together, so as to look like a simple keel, which gives them a peculiar appearance. *Fl. Brit.*

Var. 2. *Minor*. A smaller plant, with much narrower leaves, and scarcely more than two perfect florets, the upper ones falling off prematurely.

* (Mr. Salisbury observes, "no plant deserves so much the attention of the grazier as this grass. It will grow in almost any soil, and all descriptions of cattle are nourished by it. It is of easy culture, yielding abundant seed. Nothing can be better than to lay down meadow-land with one bushel of this seed, ditto of *Alopecurus pratensis*, three pounds of *Anthoxanthum*, and a little *Bromus mollis*, with clover. It has been ascertained, that at the time of flowering it is of greater value than at the time the seed is ripe, proportionally, as three to one. The nutritive matter, lost by leaving the crop till the seed be ripe, thus appears to be unusually great. In point of early produce in the spring, this grass stands next to *Alopecurus pratensis*, and is superior in this respect to the Cock's-foot. Though essential for permanent pasture, it is not by itself well adapted for alternate husbandry, but should be combined. Hort. Gram. E.)

† It makes an excellent pasture, but requires a rich soil. Linn. Horses, cows, sheep, and goats eat it. ("I know of no grass of this class adapted for clays, that holds out such fair promises to repay the farmer. It is early, nutritive, and very productive. If too coarse for particular purposes, it may be reduced to chaff and mixed with clover-hay. It should be propagated by parting and planting the roots. The seed is rendered abortive by the disease termed *clavus*, which Mr. Taunton conceives may be occasioned by extreme richness of soil. Hort. Gram. E.)

E. Bot. 2266.

F. decida. *E. Bot.* *F. calamaria* β . Hook. Sm. In Gurness Gill, south side of Hawes-water, Westmoreland. Rev. Mr. Holme. Winch.

REED FESCUE GRASS. In a moist wooded valley at the foot of Ben Lawers, 1793. Mr. Mackay. Near Fort Augustus. Mr. G. Don. In Sirawley Wood, near Glashampton, Worcestershire, (though rarely producing a flowering stem, unless exposed to the sun, as Mr. Moseley observes. *E.*) In a wood, near Newton Barry, Ireland. Rev. Mr. Butt. Fl. Brit. Kenmuir bank, Glasgow. Dr. Brown, in Hook. Scot.

P. June—July. *E.*)

F. FLUITANS. Panicle branched, upright; spikets nearly sessile cylindrical, awnless.

Var. 1. Fresh water.

Curt.—(*E. Bot.* 1520. *E.*)—*Leers* 8. 5—*Schreb.* 3. f. 2—*Fl. Dan.* 237—*Stillingf.* 10—*H. Or.* viii. 3. 16—*Ger. Em.* 14. 1—*J. B.* ii. 490—*Mus. Rust.* iv. 1. 6—*C. B. Th.* 41—*Park.* 1275. 8—*Scheuch.* 4. 5—*Mont.* 35.

Straw striking root at the joints (one to three feet long. *E.*) Leaves floating flat on the water. Panicle very long, issuing from a long two-edged sheath. Spikets cylindrical but compressed, mostly ten-flowered. Blossom awnless. Valves with strong ribs, terminating in an equal number of points, these points connected together by means of a transparent membrane. (The small scale, or nectary, according to Smith really a secretory gland, at the base of the germen, being scarcely lobed, and the stigmas much divided, induced Mr. Brown to remove this plant to his genus *Glyceria*. *E.*)

Curtis observes, that growing on land it becomes smaller in every respect, and that the panicle is frequently changed to a simple spike.

Var. 2. Salt-marsh. Leaves blunt, broader, shorter, glaucous; calyx six or eight-flowered.

In Salt marshes at Lympington.

June.

FLOAT FESCUE GRASS. (FLOAT MEADOW GRASS. *Poa fluitans*. Fl. Brit. Hook. Grey. *F. fluitans*. Linn. Huds. Curt. Leers. Schreb. Willd. Pursh. *Glyceria fluitans*. Br. Sm. Eng. Fl. *E.*) Wet ditches and ponds, common.

P. June—Sept. P.*

(4) Flowers in spikes.

F. LOLIACEA. Spike two-ranked, drooping; spikets alternate, sessile, compressed; florets cylindrical, awnless. *E.*)

* The seeds are small, but very sweet and nourishing. They are collected in several parts of Germany and Poland, under the name of *Nanna Seeds*, and are esteemed a delicacy in soups and gruels, upon account of their nutritious quality and grateful flavour. When ground to meal, they make bread very little inferior to that in common use from wheat. The bran, separated in preparing the meal, is given to horses that have worms; but they must be kept from water for some hours afterwards. Geese are very fond of the seeds (as also smaller birds; and, according to Schreber, fishes, particularly trouts. *E.*). The plant affords nourishment to the *Phalena Festuca*. Horses and swine will run risks to get at the saccharine early young shoots. The cultivation, uses, &c. of this plant were made the subject of an Inaugural Dissertation by M. Bruz, published at Vienna, 1775. (This grass constitutes a part of the luxuriant herbage of the Orcheston water-meadow; but Salisbury judiciously cautions the agriculturist not to expect such an amazing produce under circumstances less favourable. Sinclair reports it to be capable of cultivation as a permanent pasture grass. *E.*)

Curt.—(*Hort. Gram.*—*E. Bot.* 1821. E.)—*Park.* 1146. 7—*H. Ox.* viii. 2. 2, the single spike.

(Stems several, erect, two feet high. E.) Spike eight or ten inches long ; sometimes a little branched at the bottom. *Spikets* sessile, nearly upright, containing from nine to fourteen florets. *Calyx* valves ribbed similar to those in *F. elatior* ; inner valves sometimes wanting. *Blossom* not ribbed like that in *F. fluitans*. (It is distinguishable from every variety of *F. fluitans* by the glumes being sharp-pointed and not ribbed ; from the plants of the genus *Lolium* by its bivalve calyx and paler hue ; though it much resembles *Lolium perenne*. Fl. Brit. Mr. Brunton states, that the florets are strongly ribbed more than half way down ; a remark confirmed by Mr. Dawson Turner, who adds, that the nerves are most visible in young flowers, and disappear with age. Bot. Guide. 670. (Mr. Swayne calls this plant, (or a variety scarcely dissimilar,) *F. hybrida*, from its constant infertility, proved by many years observation, and suspects it may originate from *F. pratensis*, *F. fluitans*, and *Lolium perenne*. E.)

SPIKED FESCUE GRASS. (Welsh: *Peisg-wellt tywysenaidd*. E.) Moist meadows. (Common in Yorkshire and other counties ; not very frequent about London. Anglesey. Welsh Bot. In a meadow on the banks of the Trent near Nottingham, Mr. Sinclair observed it to constitute the principal herbage. Meadow at the foot of Salisbury Craigs, and by the side of the walks in Hope Park, Edinburgh. Greville. P. June—July. E.)*

BROMUS.† *Calyx* two-valved : *spikets* oblong, cylindrical, two-rowed : *awn* beneath the point : (*Seed* elliptic-oblong, united to the inner valve. E.)

B. SECALINUS. Panicle expanding ; fruit-stalks undivided ; *spikets* egg-shaped, compressed, with ten flowers ; florets distinct, cylindrical. Fl. Brit. Awns wavy, shorter than the glumes. Leaves slightly hairy.

E. Bot. 1171—*H. Ox.* viii. 7. 16—*Wieg.* 1. 2—*Scheuch.* 5. 10—*Cam. Epit.* 927.

(Straw three feet high, leafy, upright, undivided, cylindrical, smooth. Leaves strap-shaped ; on the upper surface and particularly at the edges, hairy ; rough underneath. Sheaths smoothish. Sheath-scale short, bitten, hairy. Panicle scarcely half a foot long. *Calyx* unequal, awnless. Husks elliptical, smooth, three-nerved, membranous at the edge. Florets generally smooth, sometimes pubescent, whitish green, shining. Fl. Brit. E.) Awns shorter than the blossom, not quite straight. Panicle branches rough, not hairy. *Spikets* six to ten-flowered. *Blossom* very strong and woody, not hairy, nor distinctly ribbed.

(Smith observes that this species may easily be known by its broad, oval, compressed spikes, each consisting of not more than ten or twelve cylindrical, rather remote florets, almost always smooth, and drooping as they ripen from the length of their foot-stalks, which are for the most part quite simple. Linn. Tr. E.)

(Var 2. *Spikets* ten to fifteen-flowered ; florets downy, (but not invariably so) ; awns as long as the glumes.

* (This Fescue is superior to rye-grass in produce, and springs earlier ; but the imperfect seeds render its propagation almost impracticable, as its merits hardly warrant transplanting. Hort. Gram. E.)

† (From *βρωμα*, food ; either for man or beast. E.)

E. Bot. 1884—*Scheuch.* 5. 9.

B. multiflorus. Fl. Cantab. Sm. Fl. Brit. With. Ed. 6. *B. velutinus.* Schrad. Sm. Eng. Fl. Hook. Grev. though, unfortunately, the latter two accurate observers have not been able to trace this plant in the vicinity of Edinburgh, or elsewhere. In corn-fields, rare. Between Edinburgh and New Haven. Near Norwich. Fl. Brit. Paradise, near Cambridge, and Audrey Causeway. Relhan. (Near Sexton, Durham. W. Backhouse, jun. At Norwood, near Ravensworth, Durham. Winch Guide.

SMOOTH RYE BROME GRASS. (Welsh: *Pawr-wellt Ller. E.*) *B. polymorphus* var. 2. *secalinus.* With. Ed. 4. E.) In corn-fields. Near Edswinford, Carnarthenhire, among the winter corn. Sir J. Banks. In a meadow below Cook's Folly, near Bristol. Sir T. Frankland. In Norfolk not rare. Rev. Mr. Bryant. On the sea coast at Ryde, in the Isle of Wight. Very troublesome amongst wheat in Norfolk, where it is called *Drank.* Mr. Woodward. (In corn-fields near Sunderland. Winch Guide. Among winter corn, in Anglesey. Welsh Bot. E.) A. May—July. E.)

(*B. mollis.* Panicle upright, compact; fruit-stalks branched, spikets egg-shaped; florets tiled, depressed, striated, pubescent. Fl. Brit. awns as long as the glumes: leaves and sheaths very soft and downy.

E. Bot. 1078. E.)—*Schreb.* 6. 1. 2—*Hort. Gram.*—*Leers* 11. 1—*Scheuch.* 5. 12—*H. Ox.* viii. 7. 18—*Weig.* 1. 4—*Curt. fasc.* 1. t. 8.

Straw upright, two feet high, undivided, cylindrical, striated, often smooth, afterwards woolly. *Joints* swollen, sometimes hairy. *Leaves* (and *sheath* likewise), striated, woolly with soft hairs, scarcely rough at the edge. *Sheath-scale* rather sharp-pointed, torn. *Panicle* two or three inches long, expanding with age, doubly compound. *Spikets* rather upright, sharp-pointed, a little compressed. *Florets* five to ten. *Calyx* of two husks, unequal, elliptical, notched at the end, membranous at the edges, keeled, hairy, with seven or nine strongly marked, green scores. *Florets* like the calyx, concave, with rough awns the length of the valves; inner husks very thin, and much narrower, not striated, thicker at the edges, green, fringed. *Seed* oval, flattened. Fl. Brit.

Nothing can be more distinct than this common *Bromus* from the preceding. Its compound dense panicle, and its strongly ribbed, depressed, closely imbricated glumes, at once distinguish it. Few plants vary more as to luxuriance. Sm. in Linn. Tr.

B. polymorphus var. 1. *mollis.* With. Ed. 4. where the author observes, we have two sorts of this soft and hairy *Bromus*; in the one the panicle branches are downy, supporting one or two, but rarely three spikets, the spikets have each ten or twelve florets; the calyx larger valve has a short awn, and both the calyx and blossom are hairy and strongly ribbed. In the other, the panicle branches are rough, not downy, supporting but one, rarely two spikets, the spikets have each six or eight florets, the calyx larger valve is scarcely awned, the calyx is ribbed and hairy, but the blossom smooth. This is the kind expressed by most of the figures. The former is mostly found growing in corn-fields, though sometimes in mowing grass: the latter in meadows, pastures, hedge banks, and even on walls.

SOFT BROME GRASS. LOB GRASS. OAT GRASS. (Welsh: *Pawr-wellt maswy*. E.) B. May—June.*

(*B. RACEMOSUS*. Panicle rather upright, spreading; fruit-stalks undivided; spikelets egg-shaped, six-flowered; florets tiled, depressed, striated, smooth. Fl. Brit. Awns as long as the glumes: leaves somewhat downy.

E. Bot. 1079—*Hort. Gram.*—*H. Ox.* viii. 7. 19.

More slender than *B. mollis*. Straw rather smooth. Leaves on both sides hairy, but a little rough at the edges. Sheaths rough with hairs for the most part bent outwards. Panicle thin, not compact, simple. Fruit-stalk half whirled, scabrous, elongated, scarcely ever two-flowered. Spikelets like those of *B. mollis*, but very smooth, scarcely seven-flowered, shining, varied with white and green, nerves but little prominent. Awns rough, the length of the valves. Fl. Brit. Calyx ribbed, awnless. Awn of the blossom not quite straight.

SMOOTH BROME GRASS. Welsh: *Pawr-wellt llyf'n*. *B. polymorphus*. var. 3 and 4. With. *B. arvensis*. Dicks. II. S. *Fl. Bot.* 920, excluding the synonyms. Sincl. *B. pratensis*. *E. Bot.* 1984, at the bottom. Ehrh. In meadows and pastures. At Holkham, Norfolk. Mr. Crowe. Earsham. Mr. Woodward. Bayton, Wilts. Mr. Lambert. At Battersea. Smith in Eng. Fl. Caroline Park, Edinburgh. Hooker. A. June. E.)†

B. SQUARROSUS. Panicle drooping; spikelets egg-shaped; awns wide apart. Linn. Panicle unbranched. Huds.

(*E. Bot.* 1885. E.)—*Barr.* 24. 1—*Scheuch.* 5. 11—*Mont.* 32.

Panicle nutant. Spikelets smooth, egg-shaped, each on a little pedicle, thread-shaped, but thicker towards the top. Awns divaricating.

OPEN-AWNED BROME GRASS. (CORN BROME GRASS. E.) Corn-fields near Glastonbury, and Marshfield, Sussex. Huds. A. July.

This is inserted on the authority of Mr. Hudson, but I have never seen a native specimen. (Smith is apprehensive that Hudson mistook *B. secali-*

* Mr. Swayne says this grass is disliked by farmers as being in corn-fields a troublesome weed, and in pastures and mowing grounds of little value, since it has generally shed its seed by the time of mowing, and produces very few root-leaves. (Notwithstanding its early produce we are inclined to consider it as one of the worst of an inferior tribe. Mr. Salisbury adduces the awn of this grass, (though not peculiar to it), as an instance of the wonderful mechanism by which Nature enables the seed to make its way into the ground when the land is so thickly covered with other herbage, that all the art of man would fail to effect such a purpose. By the susceptibility of the awns to atmospheric changes, curling up in dry weather and relaxing with moisture, a continued motion is occasioned, which empowers the seed to penetrate through the foliage to the soil, and therein by the same process speedily to bury itself. Even this little isolated fact should encourage habitual observation, and a conviction that the wisdom of God is manifested in every object, though few of us may take the trouble to inquire in what particular contrivances and adaptations this wisdom is displayed; and therefore are we too apt to rest satisfied with vague and general views, which seldom produce any deep impression on the mind. But he who does not acknowledge the wisdom of the Creator in the least of His works, as well as in great and extraordinary phenomena, betrays a highly culpable negligence, bordering on impiety.

"There's not a plant, nor flower below,
But makes his glories known." E.)

† (This, with the other annual Bromes, is scarcely worthy of the farmer's attention.

mus for this plant. Hooker, on the authority of Don, reports it to have been found in several parts of Scotland, though himself almost incredulous. E.)

B. FRECTUS. Panicle upright, terminating abruptly; spikets oblong, hairy, awned, about eight florets in each; straws straight; leaves hard, (fringed with scattered hairs. E.)

(*Dicks. H. S.—Hort. Gram.—E. Bot. 471.—Vaill. 18. 2. E.*)—*Scheuch. 5. 13.*

(*Stem* two to three feet high. *Panicle* purplish. *Nectary* cloven, tumid at the base. E.) *Awns* a continuation of the keel of the blossom, thus forming the connecting link between this genus and *Festuca*. *Woodw. Panicle* branches each supporting a single spiket. *Spikets* slender, five to seven-flowered. *Calyx* somewhat hairy, ribbed, keeled, slender pointed, but not awned. *Blossom* hairy, outer valve ribbed and keeled. *Awn* shorter than the blossom. *Anthems* deep saffron colour.

(**UPRIGHT PERENNIAL BROME GRASS.** Welsh: *Pawr-wellt uniawnsyth.* E.) *Coln-fields. Holkham, Norfolk. Mr. Crowe. Near Darent Wood, Dartford. Rev. Dr. Goodenough. Fl. Brit. About Dorking, Surry. Mr. Winch. Between Llangoed church and Tros y Marian, Anglesey. Welsh Bot. King's Park, below Salisbury Craigs, Edinburgh. Hooker. E.) Ditchley Park. Mr. Woodward. In pasture ground near Short Wood, Pucklechurch. Mr. Swayne.*

Var. 2. Smooth. Spikets smooth, from five to eight-flowered; awns straight, short: lower part of the panicle drooping.

B. arvensis. Huds. not of Linn. In Ditchley Park intermixed with the former; also at Earsham, near Bungay. Mr. Woodward. P. July.*

(**B. DIANDRUS.** Panicle diffuse, upright but open; spikets strap-shaped, the middlemost in pairs; pedicles thickest at the top; (florets spear-shaped, striated, with only two stamens.

Curt.—E. Bot. 1006—H. Ox. viii. 7. 13. E.)—Barr. 76. 1.

Straws two feet high, smooth, joints swollen. *Leaves* rather broad, soft. *Panicle* loose, with few spikets. *Spikets* straight, nearly upright, in threes, each of which generally on a fruit-stalk, and sometimes a fourth, with mostly two on a fruit-stalk. *Awns* long, upright. *Linn. Panicle* not branched. *Calyx* keeled, hairy, of ten florets. *Blossom* ribbed, hairy. *Awns* shorter than the blossom. (It stoles excessively at the root. Mr. Watt. This species is readily distinguished by the diandrous florets, which were particularly observed by the author to be invariable in Portugal. E.)

UPRIGHT ANNUAL BROME GRASS. WALL BROME GRASS. *B. muralis.* Huds. Sibth. (*B. madritensis.* Linn. With. to Ed. 5. Willd. *B. diandrus.* Curt. With. Ed. 6. Sm. Hook. Grev. Sinc. E.) On old walls about London and Oxford. Huds. Severn Stoke, Worcestershire. Stokes. At the foot of St. Vincent's Rock, Bristol, on the farther part near the

* A coarse grass, disliked by cattle, as are all the *Bromes*. Properly a *Fescue*, but has the habit of a *Brome*. Mr. Swayne. (Mr. Sinclair suspects it may possibly be useful on chalky soils, but admits that it is little adapted for the best pasture land. He states that pheasants appear very fond of the seeds; which, however, are produced but sparingly. E.)

meadows. Sir J. Banks. Near Battersea. Curtis. Sunderland Ballast Hills. Mr. Winch. E.) A. May—June.*

B. AS'PER. (Panicle drooping, branched; florets lanceolate, roundish, almost nerveless, about eight, compressed, downy; awns shorter than the glumes; lower leaves hirsute. E.)

Curt. 105—(E. Bot. 1172. E.)—H. Ox. viii. 7. 27.

(Stem upright, four to six feet high, leafy. Panicle a foot long, spreading. E.) Panicle branches bearing from one to three spikets, very rough, thickest upwards, pointing one way. Spikets from six to ten flowered, long, slender, nearly cylindrical. Calyx larger valve ribbed; smaller keeled. Blossom larger valve ribbed towards the end only. Awn one third the length of the blossom. (Smith remarks that if the dorsal awn and fringed inner husk be duly attended to, this can never be confounded with *Festuca gigantea*.)

HAIRY WOOD BROME GRASS. Welsh: *Pawr-wellt blewog*. E.) *B. ramosus*. Huds. Ed. 1. *B. nemoralis*. Ed. ii. *B. hirsutus*. Curt. *B. sylvaticus*. Vogler. *B. altissimus*. Wiggers. *B. montanus*. Pollich. Woods and hedges, frequent. A. (or B. Fl. Brit.) June—Aug.

B. STERILIS. (Panicle spreading; spikets oblong; florets two-rowed; about seven; calyx taper-pointed. Awns longer than the glumes. Leaves downy. E.)

Curt.—(E. Bot. 1030. E.)—H. Ox. viii. 7. 11—Leers 11. 4—Mont. 1—Dod. 540. 2—Lob. Obs. 20. 1—Ger. Em. 76. 1—Park. 1148. 1—Ger. 60. 1—C. B. Th. 146—Matth. 1205—J. B. ii. 439. 2—Scheuch. 5. 14.

(Stem eighteen inches to two feet high, leafy, slender, sometimes taking root from the lower joints. Panicle a span long, narrow, drooping. Fl. Brit. E.) Leaves ribbed, hairy, not very harsh. Panicle branches from four to six issuing from the same point; very long, rarely subdivided. Spikets flat, broader upwards. Calyx six or seven-flowered, smaller valve keeled, larger ribbed, tapering to a point but not awned. Blossom larger valve ribbed, very rough, not hairy. Awns much longer than the blossom. (Curtis observes, that in this species and *B. diandrus* the styles grow laterally out of the germen. Stamens three, by which it is distinguished with certainty from *B. diandrus*. E. Bot. E.)

BARREN BROME GRASS. Welsh: *Pawr-wellt anhiliau*. E.) Woods, hedge sides, and on walls, frequent, (chiefly in the shade. Sinclair. E.) A. June—July.†

B. ARVEN'SIS. Panicle drooping: spikets egg-oblong; (florets about eight, smoothish, with two close ribs at each side; leaves hairy. Sm.)

* (By accurate experiments it appears that this grass will bear cutting three or four times in the course of a season, which should be done before the flowering heads prevail, they being harsh and unfit for fodder. The blade is extremely tender, its taste sweetish.)

† The rapidity of its growth is surprising. Mr. Sinclair suggests a much less favourable result than the above remarks would warrant. E.)

† The long sharp awns must prevent cattle from eating it, and it seems in no respect worthy of cultivation; hence, probably, its trivial name. E.)

Two to three feet high. Distinguished by its rather large, but slender, at length drooping panicle, and spikets which have mostly a purplish tinge. Hook. E.)

Var 1. *Aristatus*. Awned.

(E. Bot. 1984. E.)—*Leers* 11. 3.

I have a specimen with awns of some length. Woodw.

Var 2. *Mutica*. Awnless.

(E. Bot. 920. E.)—*Fl. Dan.* 293.

Straw five inches high. Root-leaves awl-shaped, smooth, channelled, stiff. Panicle close, consisting of eight or ten spikets. Spikets almost sessile, and growing on one side of the stalk; smooth, awnless, consisting of five florets. The above differences possibly occasioned by sea water, and poverty of soil. Lightf.

TAPER FIELD BROME GRASS. In corn-fields rare. (Coast of Durham. Mr. Knapp, in Eng. Fl. Scotland. Hooker. E.) Near Southampton. Sherard.

Var. 2. Shores of the Isle of Oransay. Lightfoot.

A. July.

The Fl. Lapp. and Seuc. certainly contain under *B. arvensis* the synonyms of different plants. Lightfoot by his reference to Fl. Dan. has demonstrated the existence of that var. with us; but the plant of Scheuchzer, referred to in Sp. Pl. is not yet fully established as a native. *B. arvensis* of Leers differs somewhat from that of Scheuchzer; but hardly enough to cause it to be considered distinct. (Ehrhart has distinguished the above varieties as two species; the first Smith allows to be the real *B. arvensis*, the latter one he considers *B. pratensis* of the German Botanists. E.)

B. SYLVATICUS. Spike simple, drooping, one-rowed; spikelets sessile, roundish; awns longer than the glumes; leaves hairy.

Dicks. H. S.—E. Bot. 729—*Fl. Dan.* 164—*Leers* 10. 3—*Weig.* 1. 11.

Two feet high. Root fibrous. Leaves fringed with long white hairs. Straw slender, joints woolly. Spike-stalks slender, often drooping. Spikes, calyx, and blossom more hairy than those of *B. pinnatus*. The straight hairs of the leaves disappear by cultivation. It has the habit of a *Bromus*, but the seed being unconnected with the glumes which enfold it, has induced some authors to associate it with the *Festuca*.

SLENDER WOOD BROME GRASS. *B. sylvaticus*. Poll. Sm. Fl. Brit. Hull. Hook. Host. *B. gracilis*. Weig. Roth. Willd. *Festuca sylvatica*. Huds. Lightf. With. to Ed. 7. Dicks. Sm. Ed. 6. Fl. *F. pinnatu* β. Huds. Ed. 2. Dry copses and hedges, not uncommon. P. July. E.)*

(*B. PINNATUS*. Straw undivided; spike two-rowed; spikelets alternate, nearly sessile, cylindrical, somewhat awned; awns shorter than the glumes; leaves nearly smooth.

Dicks. H. S.—E. Bot. 730—*Leers* 10. 3.

Spikets with the flat sides turned towards the straw. Awns terminal. Leaves flat. Linn. (Plant smooth. Spike four or five inches long; spikets eight to ten; calyx eight, ten, or twelve-flowered. Blossom outer valve with five or seven ribs, terminating in an awn, rather hairy at the edge; inner doubled down at the edge with a ciliated rib along each side. Root scaly. Whole plant more rigid, and less hairy than *B. sylvatica*. E.)

* (Cattle refuse this grass. It is very subject to be affected with the Rust when flowering. Hort. Gram. E.)

SPIKED BROME GRASS. *B. pinnatus*. Linn. Relh. Sm. Fl. Brit. Leers. Host. Willd. *Festuca pinnata*, Huds. Dicks. Sm. Eng. Fl. Schrad. In arid upland fields and heaths, especially in chalky or limestone soils. (Not uncommon in Yorkshire, Oxfordshire, and Kent. Sir J. E. Smith. About Dorking, Surry. Mr. Winch. E.) Near Nunnington, Yorkshire, Teesdale. Burford Downs, Oxfordshire. Rev. Dr. Goodenough.
P. July. E.*)

STIPA.† *Calyx* two-valved, one flowered. *Blossom* outer valve terminating in a spiral awn. *Awn* jointed at the base.

S. PENNA'TA. Awns feathery.

(*E. Bot.* 1356. E.)—*H. Or.* viii. 7. row 3. 9—*Barr.* 46—*C. B. Th.* 71—*Munt.* 617—*Clus.* ii. 221. 3—*Ger. Em.* 42. 6—*J. B.* ii. 512. 2—*Mont.* 68—*Scheuch.* 3. 13. *B.* (*Munt.* 173. Woodw.)

Awns from six to twelve inches long, or more; set with very fine, white, soft, pellucid, diverging hairs. This very beautiful and remarkable feature at once distinguishes it from all other grasses.

(The awns remain permanently attached till the seeds become ripe; when, invested with their elegant appendages, and barbed with penetrating bristles, they are thereby scattered over and attached to plains and rocks for the fresh propagation of their species. *Stems* a foot high. *Leaves* in dense tufts, upright, long, narrow, dark-green. *Panicle* simple, erect, of six or seven flowers. E.)

DOWNY FEATHER GRASS. Mountainous rocks.

P. July—Aug.

In Ray's Syn. p. 393, this elegant grass is said to have been found by Dr. Richardson and Thomas Lawson, on the limestone rocks hanging over a little valley called Longleasdale, about six miles north from Kendal. In the second edition of With. Mr. Alderson is said to have found it near Kendal. Mr. Gough, of Kendal, never detected it, nor heard of any person that has, except those just mentioned; there is therefore reason to fear that it may be exterminated—(an apprehension confirmed by Mr. Winch.) Mr. Woodward also states that Mr. Alderson never found it there, but only heard that it grew on the spot. Unless therefore some new discovery be made, one of the most beautiful grasses must be expunged from the list of British Plants. E.)

P. July—Aug.†

AVE'NA. *Calyx* two-valved, many-flowered. *Awn* from the back of the blossom, twisted. (*Seed* united to the indurated outer valve. E.)

A. ELA'TIOR. Panicked: calyx two-flowered: barren floret awned: perfect one sometimes awnless.

* (It cannot as yet be considered in any other light than as a noxious weed, for though the weight of produce is large, it is neither early, nutritive, nor relished by cattle. Hort. Gram. Mr. O. Roberts has observed it on Spoonbed-hill, near Painswick, so stoloniferous as to be prejudicially exclusive of more beneficial herbage. E.)

† (An ancient generic name, probably derived from *στυνη*, a silky or feathery substance; such as the awns of this plant exhibit. E.)

‡ A most interesting plant, so much resembling the plumes of the bird of Paradise as frequently to be substituted by ladies for that elegant ornament. Its agricultural merits are supposed to be inferior. E.)

Gram. Pasc.—Schreb. 1—Curt. 191—(*Hort. Gram. E. Bot.* 813. E.)—*H. Ox.* viii. 7. 38—*Park.* 1176. 1—*C. B. Th.* 18—*J. B.* ii. 456—*Ger. Em.* 23—*Fl. Dun.* 165—*Leers* 4. 4.—*Scheuch.* 4. 27 and 28.

Root bulbous, sometimes a double pear-shaped bulb, one above the other. *Straw* about five feet high; knots woolly. *Leaves* (rather harsh, E.) not hairy. *Blossom* hairy at the base. The structure of the blossom agrees so well with that of *Holcus*, that some have thought it best placed under that genus, and Gmelin has called it *H. avenaceus*, under which name it will be found in this work; but its habit authorizes us to retain it as an *Avena*, especially when we subjoin the following remarks by which it may be distinguished from that variety of *H. mollis* which contains two or three florets in each calyx, one of them barren. This species of *Holcus* has none of those large bulb-like knots at the root and the base of the straw which are so remarkable in *A. elatior*. The panicle of the latter is eight or ten inches long, in the former hardly half that length. In *Avena* the leaves and sheaths are free from hairs, the knots on the joints only are woolly, but in *Holcus* almost the whole plant is set with soft hairs. (Smith observes that the barren floret frequently contains an imperfect pistil. *Fl. Brit. E.*)

TALL OAT GRASS. (Welsh: *Mas. wellt ceirchaid.* *A. elatior.* Linn. Huds. With. Curt. Leers. Schreb. *Holcus avenaceus.* Gmel. Hook. Sinc. and Sm.; though the latter author admits that "in natural affinity it is certainly an *Avena*." It is, in fact, a plant of very questionable position, and may be considered as a connecting link between *Avena*, *Holcus*, and *Aira.* E.) Wet and damp places. Meadows, pastures, and hollow ways. P. June—Aug.*

Var. 2. *Mutica.* Awnless. Smaller than the preceding. Said to be a native of Scotland. *Hort. Gram. E.*†

* Cows, sheep, and goats eat it.—It affords a large coarse crop, but is unpalatable to cattle, especially to horses, as are the *Avenæ* in general. Rev. G. Swayne. (It is excessively bitter. A var. with knobby roots (*Grænen caninum nodosum* of Gerard, E.) is a most noxious weed in arable lands; particularly on parts of the coast in Hampshire; and by its introduction into the island of St. Kitt's, a district has been rendered useless. Salisbury. To eradicate the bulbous rooted oat-grass requires as much fallowing as the common couch. Wherever it prevails, as in the north of England and East Lothian, it should be carefully rooted out even by paring and turning in clayey arable soils; for, being strong and cumbersome, it is capable of competing with any crop. Holdich. It appears that if this grass be entitled to any place in permanent pasture, it should be in a very limited proportion. The whole plant is often affected by the disease termed Rust. Nevertheless, the animated description of Miss Kent confers no inconsiderable degree of interest, even on this plant. "I have seen it," observes that elegant writer, "six feet high, with leaves two feet long, and more than one inch wide; with its panicle of flowers gently drooping to one side, at least one foot six inches in length, and so finely polished, that, but for their green colour, we might think it was composed of silver oats. Yet it is not green; neither is it white, nor gold colour, nor purple, but it is a union of all these: it is the offspring of silver and of gold, of the amethyst and the emerald. It is, indeed, very variable; but, in the full pride of its beauty, this grass is truly magnificent. The light purple pyramids that quiver in every field and meadow, must be well known to every reader. In fine, the student who has time to investigate their beauties, will find the family of grasses peculiarly interesting, and much more various and beautiful than from the apparent homeliness of many, they might be supposed to be." E.)

† (Preferred by hares to the awned variety, but still inferior to that for general purposes. E.)

A. FALCATA. (Panicle erect, compound; calyx three-flowered, all the florets awned, and bristly at the base: spikets pendulous. E.)

(*E. Bot.* 2221. E.)—*Leers* 9. 4—*Mill. Ill.*—*H. Ox.* viii. 7. 5—*Barr.* 75. 2.

(*Stem* a yard high, upright, simple, cylindrical, smooth. *Leaves* spreading, flat, strap-shaped, finely ribbed, rough, sometimes hirsute. *Panicle* large, spreading: branches tumid at the top. *Calyx* an inch long, green, many ribbed, chaffy, smooth. *Florets* tawny, with copious bristles. *Awn* two inches long, spiral, stout. Sm. E.) *Awn* geniculate.

(Mr. Brunton has observed two varieties, one hairy at the base of the glumes only; the other entirely covered with hairs. Bot. Guide. E.)

BEARDED WILD OAT GRASS. *Haver.* (Welsh: *Fettur*; *Gwyllt-gieirch.* Corn-fields, chiefly on clays and stiff gravels. E.) A. July—Aug.*

A. PUBESCENS. Panicle spike-like; calyx about three-flowered: blossoms longer than the calyx, bearded at the base; leaves flat, pubescent.

(*Hort. Gram.*—*E. Bot.* 1640. E.)—*Leers* 9. 2—*Ray* 21. 2—*Scheuch.* 4. 20—*Ft. Dan.* 1203—*Mont.* 65.

(*Root* somewhat creeping. *Stems* one and a half to two feet high. Sm. E.) Very closely allied to *A. pratensis*, but the leaves not rolled in. Linn. *Florets* sometimes only two, at others four, and, in the more luxuriant plants, occasionally five. Scheuch. *Panicle* branches shorter than the spikets, except the lower ones which are longer, and, though rarely, branched. *Florets* purplish and silvery white. *Blossom* half the length of the awn.

(**DOWNY OAT GRASS.** Welsh: *Ceirch-wellt manbluaid.* E.) Dry chalky soils. Marham, Norfolk. Mr. Woodward. Wick Cliffs. Mr. Swayne. Marlborough Downs. (Common about Garn, Denbighshire. Mr. Griffith. Toxteth Park, near Liverpool. Dr. Bostock. Llanfihangel; Din-silwy, Anglesey. Rev. H. Davies. In limestone pastures, with the preceding, near Sunderland and Castle Eden. Mr. Winch. In Woburn park, where the soil is light and siliceous. Sinclair. Arthur's Seat and Salisbury Craigs. Greville. E.) P. June.†

A. FLAVESCENS. Panicle diffuse, erect; calyx three-flowered, shorter than the florets; all the florets awned.

Gram. Pasc.—*Curt.* 212—(*Hort. Gram. E. Bot.* 952. E.)—*Schreb.* 9—*Leers* 10. 5—*Scheuch.* 4. 18—*H. Ox.* viii. 7. 42—*Mont.* 79.

* Horses, sheep, and goats eat it. (The flowers serve rustic fishermen, instead of artificial flies, to catch trout. Sm. E.) The awns are used for hygrometers, (being very sensible to the dryness or humidity of the atmosphere, which changes cause them to contract or expand in an animated manner. By a similar movement the seed is gradually insinuated into the earth; and Linnaeus informs us, that if the bearded oat be housed with other grain, the glumes will very soon be found empty from the like procedure. E.) Sometimes so prevalent amongst barley as almost entirely to choke it. (On such occasions it has been thrashed out and sold for horse-corn. Holdich. E.) It may be extirpated by repeated fallowing, or laying down the land in grass. (When mixed with wheat, this grain is highly objectionable to the miller. In spring it is scarcely to be distinguished from the wheat plants, so that it cannot be selected and weeded out: hence the necessity of attending to the purity of the seed-corn. E.)

† Disagreeable to cattle. Mr. Swayne. (Not only mechanically so, but, according to Mr. Salisbury, from the foliage being extremely bitter. Mr. Sinclair states, that the downy hairs on the leaves almost disappear when the plant is cultivated on richer soils, and is inclined to consider it of some value among the secondary grasses. E.)

(*Root* somewhat creeping. *Leaves* more or less pubescent. Fl. Brit. E.)
About half a yard high. *Leaves* yellow green. *Panicle* much branched,
yellow green, changing to shining golden yellow; diffuse whilst in flower,
upright and compact when in seed. *Spikets* short, two or three-flowered,
one floret often imperfect. *Awn* nearly twice as long as the blossom. It
may be distinguished at a considerable distance by the colour of the fo-
liage as well as that of the panicle.

YELLOW OAT GRASS. (*Golden Oat*. Welsh: *Ceirch-wellt melynaudd*. E.)
Meadows, pastures, hills, particularly in a calcareous soil. P. July.*

A. PRATEN'SIS. Panicle spike-like; calyx five flowered (florets longer
than the calyx; partial stalk all over hairy; leaves involute,
finely serrated, naked; sheath smooth. Sm.; receptacle villous.

Hort. Gram.—Fl. Dan. 1083.—E. Bot. 1204. E.)—Leers 9. 1—Ray 21.
1—Vaill. 18. 1—H. Or. viii. 7. 21—Mont. 66.

Straw quite smooth, twelve to eighteen inches high. *Leaves* rather rough,
doubled together. *Panicle* about four inches long, branches upright,
undivided, except one or two at the bottom. *Spikets* strap-shaped, upper
ones nearly sessile. *Awns* longer than the blossom.

MEADOW OAT GRASS. (NARROW-LEAVED OAT GRASS. Welsh: *Ceirch-
wellt culddail*. E.) Heaths and high chalky lands. Norfolk, very fre-
quent. Mr. Woodward. King's Park, Edinburgh. Sir J. E. Smith.
(Upper part of Cefn Rocks, above the cave, in the parish of St. Asaph;
and Llandidno Rocks, Carnarvonshire. Mr. Griffith. Round Table, and
above Carreg Onen, Anglesey. Welsh Bot. E.) P. July.†

A. STRIGO'SA. Panicle oblong, compact, pointing one way; florets in
pairs, with two awns at the end, and a jointed awn on the back.
Schreb.

(E. Bot. 1266. E.)

Straw and leaves naked. Retz. *Calyx* as long as the spiket. *Florets*
smooth, the terminal awns short, fine, red, but white at the end. *Awn*
from the back, twice the length of the blossom. Not described by any
writer. Schreb. (*Stem* a yard high. *Leaves* more or less glaucous,
rough; and resembles the common cultivated oat, *A. sativa*, but the panicle
is strikingly different, being somewhat crowded, its branches leaning all
to one side. E. Bot.

* Mr. Swayne says it is the best of the genus for the use of the farmer; (and Mr. Salisbury reports favourably of it. Though Mr. Sinclair proves its produce not to be very great, nor its nutritive qualities considerable; combined with other grasses, he recommends it for elevated and exposed situations. It probably may be more acceptable to sheep than to other cattle. Several of our pasture grasses are frequently injured by drought acting upon the stalk, not molesting the root, but withering the succulent base of the straw, which arises from the upper joint; in consequence of which, the panicle and connecting straw dry away, while the foliage and lower leaves remain uninjured. None are so obnoxious to this injury as the present species, and in some seasons almost the whole of its panicle will be withered in a field of surrounding verdure, especially where the herbage is reserved for mowing. Journ. Nat. It is capable of being manufactured into straw plat for hats equal in fineness and evenness to the Leghorn. The Society of Arts, both in London and Dublin, have bestowed honorary rewards for this discovery. E.)

† (This species is remarkable for thriving, either on exposed dry situations, or under irrigation; but its produce and nutritive powers are inferior to those of many other secondary grasses. Hort. Gram. E.)

BRISTLE-POINTED OAT GRASS. Welsh: *Blw-geirch.* E.) Among oats. (Among corn in Anglesey. Welsh Bot. We learn from E. Bot. that it is a common weed in corn-fields in Scotland, Wales, Yorkshire, and on the downs of Cornwall. Observed between Penzance and St. Ives, by Mr. Anderson. Jones's Tour. E.) A. July.

(A. *ALPINA.* Panicle erect, slightly branched: florets about five, longer than the calyx; partial stalk bearded under each; leaves flat, minutely serrated, naked; sheaths rough; root fibrous.

E. Bot. 2141.

Root tufted, not creeping. Stem two feet high, striated. Leaves strap-shaped, rough-edged, naked, with many rough ribs; none of the leaves involute, as in *A. pratensis*, nor so strongly serrated. Stipula triangular, acute, jagged. Panicle three or four inches long, pale silvery brown. Spikelets nearly an inch long. Each floret subtended by a large tuft of bristly hairs.

GREAT ALPINE OAT GRASS. *A. alpina.* Sm. Linn. Tr. *A. planiculmis.* E. Bot. Hook. not of Schrad. Alpine rocks. Found by Mr. G. Dou upon the rocky summits of the mountains of Clova, Angus-shire.

P. July. Sm. E.)

ARUNDO.* Cal. two-valved: Bloss. awnless, surrounded with down at the base.

A. PHRAGMITES. Calyx five-flowered; panicle spreading.

(E. Bot. 401. E.)—*H. Ox.* viii. 8. 1—*Dod.* 602—*Lob. Obs.* 28. 1—*Ger. Em.* 36. 1—*Park.* 1209. 1—*J. B.* ii. 185. 1—*C. B. Th.* 369—*Trag.* 671. 2—*Leers* 7. 1—*Mont. Arundo B. E.*—*Scheuch.* 3. 14. D.

(Stem stout, six or seven feet high, annual. Leaves twelve to eighteen inches long, spear-shaped, ribbed, tapering to a very fine point. Panicle very large, at length drooping, purplish, brown, and handsome. In this particular species the hairs spring rather from the common receptacle, or partial stalk; so that the lowermost floret is nearly destitute; other species better illustrate the generic distinction by having the hairs on the blossom itself: nevertheless, to separate these plants were extremely undesirable. E.) Florets four or five, smooth, surrounded at the base with white, silky hairs, about the length of the florets. (Leaves sometimes variegated. Relh. E.)

COMMON REED. (Scotch: *LOCH REED.* Welsh: *Corsen gyffredin.* E.) Rivers, lakes, ditches; very common. P. July.†

* From *aréo, aréndo*; soon becoming dry. E.)

† The panicles are used by the country people in Sweden to dye woollen cloth green. Reeds are much more durable than straw for thatching, and are so valuable for such purpose in the few countries, that when broken down by the innumerable flights of starlings which congregated upon them, the injury is attended with serious loss. E.) Screens to keep off the cold winds in gardens are made of them; and they are laid across the frame of wood-work, as the foundation for plaster floors: also in demand for brick-makers; and to make pens for sketching or etching where freedom is required. Till the introduction, (in the seventh century,) of the more proper pens (*penna*), made of the quills of birds, they were likewise in general use for writing, though inferior to those produced in warmer climates. They likewise occasionally serve for the shafts of arrows. Swamps, and land occasionally overgrown, may be rendered productive by being planted with reeds, for which purpose pieces of the root should be placed in the ground,

A. EPIGEJOS. Calyx single-flowered, longer than the corolla, taper-pointed; panicle erect, close; flowers crowded, leaning one way, with a dorsal awn nearly as long as the down and calyx.

E. Bot. 103.

Stem nearly as tall but rather more slender than *A. phragmites*, much stouter than *A. calamagrostis*, often branched at the bottom, leafy, smooth. *Leaves* strap-spear-shaped, pointed, chiefly glaucous at the back, roughish, twice or thrice as broad as in *A. calamagrostis*. *Sheaths* close, striated, smooth, except the uppermost, which is roughish. *Stipula* lanceolate, acute, torn. *Panicle* erect, much branched, slightly spreading every way when in bloom. *Calyx* valves purplish, nearly equal, spear-shaped, narrow, long-pointed, rough. *Petals* half as long as the calyx, white, unequal, cloven at the top, the larger having three rough ribs, and bearing from about the middle a rough awn, whose extremity reaches nearly to the points of the calyx. *Down* almost as long as the calyx. A flower of this species is more particularly represented in *E. Bot.* t. 2160. f. 3.

In restoring this and the other species of *Aruno* to their proper situation, we have adopted the very full descriptions given in the English Botany, in order to elucidate the characters and synonyms which have hitherto remained in much confusion.

WOOD REED. (Welsh: *Corsen y sychdir*. E.) *A. epigejos*. *Lin. Fl. Brit.* *A. calamagrostis*. *Huds. Lipti.* *Calamagrostis lanceolata*. *With. Ed. 1. E.*) Moist woods and shady ditches. On the side of a ditch on the borders of Aqualate Meer, Shropshire. Dr. Stokes. Earsham Wood, Norfolk. Mr. Woodward. Hardwick Wood; Wood Ditton; Park Wood. Mr. Relhan. Castle Eden Dean. Mr. Robson. Dummallet, by the front avenue; rare in Cumberland. Hutchinson. Upper stew in Edgbaston Park. (About Weymouth, and in Purbeck; also in the vale of Blackmoor. Pulteney. In the wood, west of the cherry garden, Sandgate, Kent. Mr. Gerard. E. Smith. Above the beach between Friars and Llanilog; Lligwy wood, &c. Anglesey. Welsh Bot. E.) P. July.

(*A. CALAMAGROS-TIS*. Calyx one-flowered, longer than the blossom; panicle erect, spreading; flowers scattered, upright; leaves strap-shaped. *Fl. Brit.*

E. Bot. 2159. E.)—*Fl. Dan.* 280—*H. Or.* viii. 8. 2—*Scheuch. Pr.* 5—*Ger. Em.* 9. 1—*Scheuch.* 3. C, D.

(Two to three feet high; when in full blossom the long hairs give the panicle a silky appearance. *Panicle* stiff and straight, very large. *Blossoms* small, hairy at the base. *Leaves* flat. E.) Four or five feet high, unbranched. *Leaves* stiff, harsh. *Calyx* rough and strong. *Blossom* thin and membranous. *Awn* from the back of the blossom, very slender, with difficulty found on account of the long hairs from the base of the blossom besetting it.

in rows, at a foot or eighteen inches apart. The young shoots, cut off from the root where not exposed to the light, make an excellent pickle. The nest of the sedge-warbler, (a bird frequenting osier and willow beds,) is generally found suspended between the stems of Reeds at a small height from the ground. As an emblem of a pliant disposition bending with the current, though the Reed be often quoted, (as in contrast with the knotted oak), surely the flexible Rush must be considered more appropriate. The Entomologist may sometimes find a considerable variety of insects on the heads of this plant, whither they resort for food or shelter. E.)

SMALL REED. *Calamagrostis Epigejos.* With. to Ed. 5. Moist woods and hedges. At Ranaugh, Norfolk. Mr. Humphrey. Earsham Wood. Mr. Woodward. East Fen, near Revesby Abbey, Lincolnshire. Sir Joseph Banks. Near Prickwillow, Isle of Ely. Rev. Dr. Goodenough. Fl. Brit. Dalemain and Kirkland Woods, Cumberland. Hutchinson. Lakeby Car, Yorkshire. Rev. J. Dalton. A much smaller plant than either of the preceding species, and often found in open dry spots. Dunnington, Salford, and Wetheley, near Alcester. Purton. E.) Ripton Wood, Huntingdonshire. Mr. Woodward. P. June—July.

{A. STRICTA. Calyx single-flowered, acuminate, equal with the blossom: panicle erect, close: down shorter than the blossom.

E. Bot. 2160.

One to two feet high. Leaves narrow, linear, when dry involute. Panicle one to four inches long. Cal. brown, glabrous. Bloss. brownish, truncate. Hairs few, short, visible on dissection. Hook.

SMALLEST CLOSE REED. *A. stricta.* Shrad. E. Bot. Hook. *A. neglecta.* Ehrh. Sm. Linn. Tr. v. x. White Mire, one mile from Forfar. Mr. G. Don. P. June. E.)

(A. ARENARIA. Calyx single-flowered, longer than the blossom: panicle spike-like: flowers upright, awnless: leaves rolled inwards, prickly at the end. Fl. Brit.

Hook. Fl. Lond. 181—Hort. Gram.—E. Bot. 520—Fl. Dan. 917. E.)—H. Oz. viii. 4. row 3. 16—Clus. ii. 221. 1—Lob. Obs. 45. 3—Park. 1198. 3—J. B. ii. 512. 1—Ger. 38. 3—C. B. 67—Ger. Em. 42. 3—Scheuch. 3. 8. A, B, C.—Mont. 92.

(Stems two to three feet high, rigid; plant glaucous. E.) Blossom hairy at the base. Leaves involute, pointed, and thorn-like at the end; whilst growing, frequently flat, with green and white streaks. Spike four to six inches long, three quarters of an inch broad. Calyx twice as long as the blossom.

SEA MAT-WEED. MARRAM. SEA REED. (STARRE OF BENT, in Scotland. Welsh: *Morhesg*; *Menydd*; *Cors-wellt y tywod.* E.) Gaelic: *Muram.* *A. arenaria.* Linn. (Fl. Brit. *Calamagrostis arenaria.* With. to Ed. 5. E.) Sea shore, not uncommon. At Ryde, in the Isle of Wight. (North Shore, near Liverpool, there planted to bind the sand together. Dr. Bostock. Frequent on the Dorset coast, about Weymouth, Swanage, and Poole. Pulteney. Guards our island (Anglesey) along the south-west coast. Rev. Hugh Davies. Portobello and Musselburgh. Greville. A sand bank is formed by it at the Warren, near Exmouth. Rev. J. Pike Jones. E.) P. June—July.*

* Grows only on the very driest sea shores, and prevents the wind from dispersing the sand over the adjoining fields, which is not unfrequently the case where this plant is wanting. Many a fertile acre has been covered with sand and rendered useless, which might have been prevented by sowing the seeds of this plant. The Dutch have profited by the knowledge of this fact. Linn. Queen Elizabeth on this account prohibited the extirpation of it. It is planted, Mr. Woodward informs me, on some of the flat coasts of Norfolk to repel the sea, and is also suitable to the light lands of that county. He observes that as soon as it takes root a sand hill gathers round it, and thinks that some of our sandy cliffs may have thus originated. (Mr. Winch also remarks that this plant, together with a few others which seem designed by nature to bind the loose sands of the sea shore by their creeping roots, or stolones, are the means of forming the low round-topped

LOLIUM. *Cal.* one leaf, fixed, many-flowered. *Spikets* alternate.

L. PERENNE. Spike awnless: spikets compressed, many-flowered, longer than the calyx: (florets spear-shaped. E.)

Gram. Pasc.—Dicks. H. S.—(Hook. Fl. Lond.—E. Bot. 315. E.)—Schreb. 37—Leers 12. 1—H. Oz. viii. 2. 2—Fl. Dan. 747—Dod. 540. 1—Lob. Obs. 21. 1—Ger. Em. 78. 2—Park. 1145. 2, and 1146. 7—C. B. 128—Matth. 1023—Scheuch. 1. 7. A, B, C, D.—Mont. 19.

This plant is subject to considerable variation, as it grows in rich or poor soil; it is from six to twenty inches high or more, and the parts of fructification vary in proportion. The spike is generally flat, but sometimes nearly cylindrical, (two to six inches long, nearly upright. E.) Spike sometimes shows a disposition to become branched, particularly towards the bottom. Calyx from three to six or seven-flowered; the terminating calyx two-leaved.

Var. 2. *Tenu.* Slender. Spike awnless, cylindrical; spikets three-flowered. *L. tenu.* Linn. (*L. perenne* β. Sm. Hort. Gram. E.)

Var. 3. *Compositus.* Broad-spiked. Spike compound. *L. perenne* γ. Sm.

(*L. perenne* γ and δ. Sm. Scheuch. Pr. 2. *Gramen loliaceum*, &c. Spike as broad as it is long, composed of many smaller spikes placed in a double row and closely crowded together. Scheuch. This and the preceding var. observed near Norwich. Sm. E.)

RAY GRASS. RYE GRASS. CRAP. RED DARNEL. (Welsh: *Efryn parhaus.* E.) Road sides, dry pastures. P. June.*

hills, called Links, along a considerable part of our northern coasts. E.) Newbo rough, in Anglesey, subsists chiefly by manufacturing this Reed into mats and ropes. (It was introduced into Cornwall by Mr. Praed, of Trevethoe, and the progress of the sand flood which formerly desolated the country around Hayle, has thus been arrested. Guide. A legislative enactment, 1742, for the preservation of this plant, extends generally to the north west coast of England; but such persons as claimed prescriptive right of cutting it on the sea coast of Cumberland are said to be exempt from its operation. The Scottish parliament likewise protected this plant, together with *Elymus arenarius*, by a penal statute. E.)

* It makes an excellent hay upon dry chalky or sandy soils. It is cultivated with advantage along with clover, (under a crop of spring corn. E.) and springs earlier than the other grasses; thereby supplying food for cattle, at a season when it is most difficult to be obtained. Cows, horses, and sheep eat it. Goats are not fond of it. It was hunted in *Gramina Pascua* by Mr. Swayne, that there was reason to think that the common cultivated Ray grass had by frequent sowing degenerated from its natural qualities; and that it was inferior in many respects to the Ray grass growing naturally in our best meadows and pastures. Mr. Pacey, an enlightened agriculturist in the upper part of Gloucestershire, has lately raised a variety of Ray Grass from seed selected from old pastures, and has now multiplied it to that extent as to sell annually a considerable quantity at the price of 10s. 6d. per bushel. It has been proved by competent judges, to be infinitely superior to the cultivated Ray Grass, and he has a demand for all he raises. What can have been the cause of the degeneracy of the cultivated sort? Has *L. temulentum* had any share in this deterioration? Mr. Swayne. (According to Mr. Salisbury, (who admits its utility for temporary culture), it is not to be relied on for permanent meadow, as it exhausts the soil, becomes feeble, and is overpowered by other plants. "Nothing but a fine rich soil will produce a good crop." It appears that this grass is greatly influenced in its variations by different soils. An account of many varieties may be read in Sinclair's Hort. Gram. They are supposed by some cultivators to amount to sixty. From Woldridge's Husbandry, Rye Grass appears to

L. TRIMULEN/TUM. Spikets awned, compressed, many-flowered; not longer than the calyx, straw rough.

Schreb. 36—*Fl. Dan.* 160—(*Hort. Gram.*—*E. Bot.* 1124. E.)—*Leers* 12. 2—*H. Or.* viii. 2. row 2. 1. n. 2—*Dod.* 538—*Lob. Obs.* 21. 2—*Ger. Eni.* 78. 1—*Park.* 1145. 1—*Ger.* 71—*C. B. Th.* 121—*Mus. Rust.* vi. 1. 1—*Scheuch.* 1. 7. E, F—*Mont.* 18.

(*Inner petal* awnless, concave, a little fringed. *Fl. Brit.* E.) *Straw* rough upwards (two feet high. E.) *Leaves* rough when stroked downwards (brighter green than those of the preceding. E.) *Spike* four to six inches long, rough. *Awns* longer than the blossom. Terminal spiket with a two-leaved calyx, and the lowermost spikets have a minute inner leaf to the calyx.

(BEARDED DARNEL. Welsh: *Esfryn collog*; *Yd meddw.* E.) Ploughed lands, mostly among barley and flax (a very troublesome weed among wheat in Norfolk and Suffolk. Mr. Woodward.—Also at Rhil, in the parish of Rhyddlan, Flintshire. Mr. Griffith. Anglesey. Welsh Bot. E.) A. July—Aug.†

L. ARVEN/SE. Spikets nearly awnless, rather shorter than the calyx: calyx two-valved: straw smooth: (florets elliptical. E.)

(*E. Bot.* 1125. E.)—*H. Or.* viii. 2. row 2. 1. n. 1—*Matth.* 411—*J. B.* ii. 137.

(Rather smaller than the preceding, but sometimes, when growing among wheat, drawn up to the height of three or four feet. E.) Whole plant smooth, except the leaves, which are rough when stroked downwards. *Leaves* broad. *Spike* six to twelve inches or more in length. *Spiket* six-flowered. *Calyx* outer valve strong, hard, longer than the spiket; inner valve much smaller and finer in its texture. *Blossom* awnless, larger valve with one or two long and soft hairs at the end.—(Smith describes this plant as having a *calyx* generally with only one valve. *Spikets* as long as the cup, or a little longer. *Blossom*, though at first view awnless, on further inspection sometimes showing a very short awn. We learn

have been cultivated prior to 1681. Though in some respects advantageous for cultivation, the lattermath is defective. All circumstances considered, Mr. Sinclair seems to recommend in preference, both as to produce and nutritive powers, *Dactylis glomerata*, (Cock's Foot Grass), and perhaps likewise, *Alopecurus pratensis*, (Meadow Fox-tail), and *Festuca pratensis*, (Meadow Fescue). The peculiar advantages promised from certain modern varieties may probably sustain the falling credit of *Rye Grass.* E.)

* The seeds, mixed with bread-corn, produce but little effect, unless the bread be eaten hot; but if malted with barley, the ale soon occasions intoxication. Linn. (The Jaws of China make it a capital offence to use them in fermented liquors; and yet in the immediate vicinity of London, this noxious weed is cultivated by the acre, and it is to be apprehended for no better purpose. E.) Made into bread, with a small portion of wheat, and eaten repeatedly, they produced vomiting, violent colics, and death. Month. Rev. v. 67. p. 559. Sheep are not fond of it. (By some (among whom Prof. Martyn) supposed to be the real *Darnel* of the ancients, the opprobrium of agriculture a thousand years ago,

“ — Interque nitentia culta

Infelix lolium et steriles dominantur avenæ.” Virg. Georg. 1. 153.

In like terms, Bucol. 5. 37.

though, perhaps in Britain some other weeds are more deserving of general execration; and have, therefore, incurred the same name (as *Bromus scaberrimus* and *mollis*), tending only to perpetuate confusion. Never being found beyond the precincts of tillage fields, Mr. Sinclair conjectures it may originally have been imported with grain from warmer climates. E.)

from E. Bot. that Mr. Forster in some spikets observed two, or even three small inner valves to its calyx. E.)

WHITE DARNEL. (Welsh: *Efryn digol*; *Yd meddw gwyn*. In fields to the north of Forfar, Scotland. Mr. Mackay. Fl. Brit. Walthamstow. Mr. E. Forster; and at Kennington, near London. Mr. Groult. in E. Bot. Also in Cambridgeshire, Norfolk, and near Beaumaris; very common amongst wheat in Rhil, in the parish of Rhyddlan, Flintshire. Mr. Griffith. E.) A. July.*

ROTTBÖLLIA.† *Cal.* one or two-valved, egg-spear-shaped: *florets* alternate, on a flexuose fruit-stalk: *blossom* two-valved, awnless.

R. INCURVA'TA. Spike cylindrical, awl-shaped: calyx husk awl-shaped, appressed, bipartite.

(E. Bot. 700. E.)—*Fl. Dan.* 938—*H. Or.* viii. 2. 8—*Park.* 1140—*Barr.* 5 and 6—*Scheuch.* 2. 1—*Pluk.* 191. 6.

Spike without awns, smooth, flexuose, but little thicker than the straw. *Calyx* of two valves; both placed outwardly. *Blossom* valves placed contrarywise to those of the calyx. Linn. (*Stems* branched, numerous, a span long, partly procumbent leafy. E.) *Leaves* short, firm. *Flowering stems* ascending, below whitish, cylindrical and smooth. *Spike* green. *Florets*, one to each joint, alternate. *Calyx* valves strap-spear-shaped, ending in a stiff point, the point lying in a notch of the joint above, stiff, green, furrowed without, white and shining within, one expanding when the pollen is ripe. *Blossom* nearly as long as the calyx. Woodw.

(Var. 2. R. *filiformis*. Roth. Don. More slender, spike filiform, nearly erect. Smith conjectures drawn up weak among other grasses. Salt marshes near Aberlady bay, fifteen miles from Edinburgh. Hook. Grev. E.)

SIA HARD GRASS. (Welsh: *Corwelltyn camaidl*. E.) *Egilops incurva*. Linn. Sp. Pl. Lightf. R. *incurvata*. Linn. Fil. Suppl. Willd. Sm. Sea coast. Salt Marsh, below King's Weston, near Bristol. Dr. Stokes. Near Yarmouth. Mr. Crowe. Near Seaton, Durham. Mr. Robson. (Rhil Marsh, Flintshire. Mr. Griffith. At Sheringham, Norfolk; and Exmouth, Devonshire. Rev. Dr. Godenough. Upon the shores, and in dry salt marshes at Dimchurch, Kent, where also occurs Var. 2 Mr. Gerard. E. Smith. In the vale of Menachau, Cornwall. Rev. J. Pike Jones. North Shore, by Bank Hall, near Liverpool. Dr. Bostock. At the head of Lowestoft Broad. Suffolk. Mr. Woodward. Between Friars and Penmon, just above the beach; Cemlyn and Dulas bays, Anglesey. Welsh. Bot. E.) A. July—Aug.

E'LYMUS.‡ *Cal.* lateral, two-valved, several together, many-flowered.

E. ARENARIUS. Spike upright, compact: calyx woolly: longer than the floret: (leaves with a spinous point. E.)

* It is very injurious to a wheat crop, but may readily be avoided, as it is sown along with the seed. Mr. Pitt, in Staffordshire Report.

† (In honour of ROTTBÖLL, who flourished in the last century as an author, and professor of Botany at Copenhagen. E.)

‡ (*Elymus* of Dioscorides, from *elyon*, to fold up, or infold, as does the sheath the spike of some species. E.)

Scheuch. 40—(*Hort. Gram. E. Bot.* 1672. E.)—*Gmel.* i. 25—*Clus.* ii. 21. 2—*C. B.* 68. 2—*Ger.* 23—*C. B. Th.* 14—*Park.* 1277. 1—*J. B.* ii. 478. 2—*H. Or.* viii. 2. 11.

(*Stems* three or four feet high, reed-like, hollow. *Stipula* very short, by which the plant may readily be distinguished from *Arundo arenaria*. *E. Bot.* E.) *Spike* upright, long, woolly (six to twelve inches long, glaucous. E.) *Little spikes* two together, straight, containing two florets, awnless. *Leaves* like those of an *Arundo*, glaucous, or whitish; rolled inwards and sharp-pointed. Linn.

UPRIGHT SEA LYME GRASS. (STARR. E.) Sea coast, in loose sand. (Isle of Bute; and in Devonshire. Hudson. At Wells and Happisburgh, Norfolk. Mr. Crowe. Sea coast, four miles east of St. Andrew's. Mr. Mackay. Fl. Brit. Common on the east and north coast of Sutherland, and shores of Caithness. Hooker. Coast near Sunderland. Mr. Winch. Abbey Holm and Allonby, Cumberland. Hutchinson. Buncdon and Aranmore, Donegal. E. Murphy, Esq. E.) P. July—Aug.*

(E. GENICULATUS. *Spike* bent perpendicularly downwards, loose: calyx bristle-shaped, spreading, longer than the spikets: leaves with a spinous point.

E. Bot. 1586.

Root perennial, downy. *Plant* glaucous, larger than the foregoing, but more slender. *Leaves* hard and rigid, long, narrow, involute, furrowed above, smooth beneath, terminating in a sharp spine. *Stem* round, very smooth, three or four feet high. *Spike* simple, loose, a foot and a half to two feet in length, bent down at an acute angle about the second or third spiket. *Spikets* four-flowered. *Florets* very distant, sharp-pointed, downy. *Common receptacle* sometimes naked and elongated at the base. Fl. Brit.

PENDULOUS SEA LYME GRASS. THREE-JOINTED LYME GRASS. Found in marshes near Gravesend by Mr. Dickson; and first distinguished from *E. arenarius* by Mr. Curtis. P. July. E.)†

E. EUROPEUS. *Spike* upright: spikets two flowered, as long as the calyx.

Scheuch. Pr. 1. 1—(*E. Bot.* 1317. E.)—*Park.* 1144. 7. (1)—*Mont.* 94.

(*Stem* erect, two feet high, striated. *Leaves* spear-shaped, many-ribbed, flat, acute, rough on both sides and at the edges. *Spike* two or three inches long, close, green; its main stalk angular, furrowed, flexuose. *Flowers* three together at each notch. Each calyx-valve tipped with a straight rough awn, half its own length. *Florets* often solitary, never more than two. Outer valve of the blossom ribbed, rough, especially in

* It resists the spreading of the loose sand on the sea shore. Is it not capable of being formed into ropes as is *Stipa tenacissima* in Spain? Cows, horses, and goats eat it; sheep refuse it. (Mr. Salisbury states that the foliage makes excellent mats and baskets. Mr. Sinclair informs us that this grass may be considered the sugar-cane of England, one-third of its nutritive produce consisting of saccharine matter. What sand *Arundo arenaria* arrests and collects, *E. arenarius* secures. They often grow in company, and conjointly effect much benefit. Penal statutes have been enacted both by English and Scotch Parliaments for the protection of these plants. In Iceland the seeds are used to make bread. E.)

† (This species contains but a small portion of saccharine matter. The root is powerfully creeping, and the foliage tough and coarse. It seems but little adapted for useful purposes. Hort. Gram. E.)

the upper part, terminating in a long, straight awn. *Styles distant, extremely short. Seed lanceolate, with a furrow along the upper side, and a downy point, firmly coated with both valves of the blossom.* Sm. E.)

WooP LYME GRASS. *Hordeum sylvaticum*. Huds. Woods in chalky soil. Rocks opposite Matlock Bath; Ripton Woods, Huntingdonshire. Near Berkhamstead, Herts. In the north, frequent. Mr. Woodward.

P. June.

HOR'DEUM.* (*Cal. of two parallel valves, aggregate, ternate, with one floret. Central flower only perfect.* Sm. E.)

OBS. The curious, but complicated structure of the plants of this genus has prevented many young Botanists from satisfactorily ascertaining the species, though there is no great difficulty in the task. We have only three species in this island, all of which have

1st. Two barren and one perfect floret in each set.

2d. All the awns, whether belonging to the involucre, or to the larger valve of the blossom, barbed.

3d. Smaller and inner valve of the blossom awnless.

4th. Involucre, or fence, two leaflets, or awn-like substances, to each floret, and a third to the perfect floret, placed at the base and on the outside of the inner valve of the blossom, and about the length of the valve.

The British species may be readily discriminated thus:—

H. murinum. Some of the fence-leaves (involucre, or calyx-valves, E.) fringed at the base.

H. pratense. Fence-leaves bristle-shaped, neither fringed nor expanded at the base.

H. maritimum. Some of the fence-leaves expanded and spear-shaped at the base.

H. MURINUM. Lateral florets barren, awned, smooth on the keel; involucre of the intermediate florets fringed.

Curt. 325—*Fl. Dan.* 629—(*E. Bot.* 1971. E.)—*Lob. Obs.* 18—*Park.* 1157—*H. Or.* viii. 6. 4. *Gr. Secalin*—*Ger.* 66. 2.—*C. B.* 134—*Ger. Em.* 73, upper figure—*Bar.* 111. 1—*Mont.* 90, the middle floret.

(*Stems* a foot high, decumbent at the base, then erect, very leafy. *Leaves* spreading, acute, rough. *Spike* two or three inches long, inclined. *Spikes* distichous, imbricated. *Grev.* E.) *Involucre* half the length of the florets. *Florets* two barren and one fertile, forming a set; the larger valve in all the florets awned. Each barren floret has two fence-leaves; one of which is fringed at the base. The fertile, or perfect floret, has two fence-leaves on the outside the larger awned valve of the blossom, both of which are fringed at the base. This fertile floret has also a third fence-leaf, resembling an awn, placed at the base of the inner valve of the blossom, and not fringed.

* (From *horreo*, to set up as bristles or hair through anger or fear; in allusion to the ears of barley being conspicuously awned. E.)

WALL BARLEY GRASS. (MOUSE BARLEY. E.) WAY BENNET. WILD RYE. (Irish: *Cuiseog Fhin*. Welsh: *Haidd-wellt y muriau*. Walls and road sides, common. A. April—Aug.*

H. PRATEN'SE. Lateral florets barren, nearly awnless; involucren bristle-shaped, rough.

Gram. Pasc.—(*Hort. Gram.—E. Bot.* 409. E.)—*Vaill.* 17. 6—*H. Ox.* viii. 2. row 1. 6—*Fl. Dan.* 630—*Park.* 1144. 7. (3)—*Mont.* 96.

(Twelve to eighteen inches high. Root fibrous, occasionally becoming bulbous. More slender than the other species. Stem more upright and twice as tall. Leaves narrow, roughish, sometimes hairy. Sheaths close, not swelling, with a scarcely perceptible stipula. Spike two inches long, often tinged with brown or purple. Stigmas feathery along the upper side. Sm. E.) Involucren longer than the barren, shorter than the fertile florets. Florets, two barren, one fertile, forming a set, the larger valve in all the florets awned. Each barren floret has a fence of two awn-like leaves, neither fringed nor expanded at the base. The fertile floret has two awn-like fence leaves on the outside the larger awned valve of the blossom, and a third at the base of the inner or smaller valve, none of them either fringed or expanded at the base.

MEADOW BARLEY GRASS. (*H. pratense*. Huds. *H. nodosum*. Linn. Sp. Pl. *H. murinum* β. Linn. *H. secalinum*. Schreb. Spicileg. *H. maritimum*. Oed. Moist pastures and meadows. P. June.†

H. MARITIMUM. Lateral florets barren, nearly awnless; middle floret perfect, with a long awn; (inner valve of the calyx semi-ovate. E.)

Dicks. *H. S.*—(*Hook. Fl. Lond.—E. Bot.* 1205. E.)—*H. Ox.* viii. 6. 5.

(The smallest species, more glaucous, rarely a foot high, procumbent at the base. Much resembles *H. murinum*, but *maritimum* is invariably distinguished by the semi-ovate form of the innermost valve of the calyx. E.) Involucren longer than the barren, shorter than the fertile, florets. Florets two barren and one fertile forming a set; the larger valve in all the florets awned. Each barren floret has two fence-leaves, one of which is spear-shaped at the base. The fertile floret has two awn-like fence-leaves on the outside the large awned valve of the blossom, and a third short one at the base of the inner or smaller valve.

* Sheep and horses eat it (but inferior with regard to nutritive powers, and obnoxious from its long awns. This, or one of its congeners, vid. *H. maritimum*), renders the hay in some parts of the Isle of Thanet so pernicious, as to be absolutely impracticable to horses unaccustomed to it, frequently occasioning inflammations. It is there called *Squirrel-tail Grass*. E.) It feeds the Brown Moth, (*Phalena granelia*), and the Barley Fly, (*Musca frit*): the latter very destructive in Sweden, by getting into the ear, but, according to Kirby and Spence, not yet observed in England. E.)

† In moist meadows it produces a considerable quantity of hay, but is not to be recommended as one of the best grasses for the farmer, which are *Alopecurus pratensis*, *Poa trivialis*, *Dactylis glomerata*, *Cynosurus cristatus*, *Festuca duriuscula*, *Festuca pratensis*, *Festuca hybrida*, *Avena flavescens*, and above all *Lolium perenne*, carefully raised from seeds, first selected from the best varieties to be found in old meadows and pastures. If gardeners, and even farmers, are so careful in raising the seed of their cabbages and turnips, surely some of this care is due to the cultivated grasses. Swayne. (Mr. Sinclair says this grass often prevails in excellent sheep pastures without objection; but for hay he conceives the long sharp awns with which the spikets are armed might prove injurious to the mouths of cattle. E.)

This is the true *Squirrel-tail Grass* of the Isle of Thanet, and not *H. murinum*. In its short and stunted growth, from its maritime situation, the awns are rigid and strongly barbed, so as to be extremely troublesome to the mouths of horses when mixed with hay. Colonel Velley, who sent me the specimen, says it is very common all along the Kentish coast, from Sheppey Isle to the Isle of Thanet. *H. murinum* on the sea coast sometimes assumes the stunted habit of the true Squirrel-tail, but it wants the rigidity of that, and is not so strongly barbed.

SEA-SIDE BARLEY GRASS. *Gram. spicat. secalin. maritimum minus*. Scheuch. 18. St. *H. marinum*. Huds. Pastures, marshes, and sandy ground, near the sea. A. June—July.*

TRITICUM.† (*Calyx* of two-transverse, opposite valves, Sm. E.) Solitary, mostly three-flowered: (*spike-stalk* flexuose, toothed. E.)

T. JUNCEUM. (*Calyx* five-flowered, blunt; leaves, edges rolled in, with a spinous point. E.)

Dicks. *H. S.*—*Fl. Dun.* 916—(*E. Bot.* 814. F.)

(Root creeping, tenacious. *Plant* very glaucous. *Stems* one to two feet high, often purplish at the base. *Leaves* striated, very smooth beneath, but rough between the *striae* on the upper surface. *Spike* three to five inches long. *Spikets* compressed, sessile, alternate, erect, distichous, very smooth, obtuse, four to six flowered. Grev. E.)

Var. 2. With a leafy spike. Ray. (*T. junceum* var. γ . *Fl. Brit.* E.)

Ger. 23. 2. C. B. 15—*Park.* 1277. 3; this seems only a diseased plant, possibly from the puncture of insects.

SEA WHEAT GRASS. (RUSH WHEAT. Welsh: *Gwenith-wellt brwynnaudd y morlan*. E.) Sea shore, common. P. June—July.‡

T. REPENS. *Calyx* four (or five, E.) flowered, awl-shaped, tapering to a point; leaves flat; root creeping. E.)

Schreb. 26. *Hort. Gram.*—(*E. Bot.* 909. E.)

(Height and general aspect of *T. junceum*, but rather more slender; glaucous only when growing near the sea. *Spikets* smaller, less compressed than in *T. junceum*. *Cal.* and *outer valve* of the *Bloss.* five-nerved, acute, or terminated by an awn of variable length. Nerves of the *calyx*, as in the preceding species, vary from five to nine. Hook.

Var. 2. *Calyx* two to five-flowered; awnless.

Schreb. 26. iii.—*Lac.* 12. 3—*H. Oc.* viii. row 3. 8—*Mont.* 25.

(Salt banks at Weymouth. E.)

Var. 3. *Calyx* five to eight-flowered; awns not a line long.

Schreb. 26. ii. and 2 and 3—*Mont.* 26—*Park.* 1173. 2—*Barr.* 906. 2—C. B. Pr. 17. 1—*Th.* 131—*Gmel.* 1. 24—*Scheuch.* 1. 1. 4, C. 1.

Var. 4. *Calyx* four to six-flowered; awns two to four lines long. St.

* (Mr. Salisbury confirms the opinion that the bristly awns or barbs render cattle diseased in the mouth. E.)

† (So called because it is *tritum*, beaten, or threshed, as corn, out of the ear.

‡ (Assists in binding the loose sand on the sea shore. E.)

Fl. Dan. 748—*Schreb.* 26. 5 and 7—*Scheuch.* 1. 1. C. 2.

Var. 5. *T. repens* β. Sm. Leaves sea-green, stiff, acute. Ray. Calyx from three to eight-flowered; florets pointed. Huds. *T. repens* γ. Sm. Sea coast.

(Rev. Hugh Davies finds a var. on the north-east coast of Anglesey, so very long awned as to resemble the following species. E.)

DOG'S GRASS; SQUITCH OR COUCH GRASS; CREEPING WHEAT GRASS. (Welsh: *Gwenith-wellt ymdanawl*. E.) Very common. P. June—Aug.*

T. CANINUM. Calyx with three or five ribs, pointed, mostly four-flowered; awns longer than the blossom; spikets upright; (leaves flat; root fibrous. E.)

(*E. Bot.* 1372. E.)—*Leers* 12. 4. ii.—*H. Ox.* viii. 1. row 3. 2—*Buzb.* iv. 50.

(Stems two feet high, leafy, minutely striated. Leaves nearly upright, flat, bright green, rough on both sides, spear-shaped. Spike three or four inches long, compact. The fibrous root readily distinguishes this species from the last. E.) Blossom inner valve spear-shaped, just sensibly longer than the outer; outer bare of hairs, edges at the point membranous. The above circumstances distinguish it from *Festuca sylvatica*, which it much resembles in its general appearance. St.

DOG'S WHEAT. (BEARDED WHEAT GRASS. (Irish: *Bruim fher*. Welsh: *Gwenith-wellt sypwraidd collog*. E.) *T. caninum*. Linn. Sp. Pl. Ed. i. Huds. Schreb. Sm. Hook. *Elymus caninus*. Linn. Willd. Woods and hedges. Ripton wood, Huntingdonshire; and in the north, frequent. Mr. Woodward. About Painswick. Mr. O. Roberts. Lligwy wood, Anglesey. Welsh Bot. About Edinburgh, as between Caroline Park and Cramond. Greville. E.) P. June—July.†

T. LOLIAECUM. (Calyx obtuse, many-flowered; spike simple, unilateral; stem branched; root fibrous. E.)

E. Bot. 221—*Pluk.* 32. 7.

Whole plant rigid, three or four inches high. Floral-leaf shorter than the spike. Spike one inch and a quarter to two inches long, a quarter of an inch broad. Spikets ten to fifteen, not crowded. Calyx six or eight-flowered, both that and the blossom awnless. The serpentine spike-stalk,

* (White Couch, in opposition to *Agrostis nigra* (*repens* of Sinc.) Black Couch. E.) At Naples the roots (much larger than those of English growth, E.) are collected in large quantities, and sold in the market to feed horses; they have a sweet taste, somewhat approaching to that of liquorice; when dried and ground to meal, they have been made into bread in seasons of scarcity. The juice of them, drank liberally, is recommended by Boerhaave in obstructions of the viscera; particularly in cases of schirrous liver and jaundice. Cattle are frequently found to have schirrous livers in winter, and they soon get cured when turned out to grass in the spring. Dogs eat the leaves to excite vomiting, (probably by mechanical action stimulating the anterior passage. E.) Horses eat them when young, but leave them when fully grown. Mr. Southwell. Cows, sheep, and goats eat them. (Pitt and Sinclair describe this as constituting the principal Couch-grass in gardens, and rich cultivated soils. *Holcus mollis* and *Poa pratensis* are the proper Couch-grasses of light and sandy soils. *Agrostis alba* is chiefly troublesome in clayey lands. Forking the roots after the plough is the best mode of extirpation. It does not thrive well combined with other grasses. The seed is subject to mildew. Hort. Gram. E.)

† (Mr. Sinclair considers this grass of value for early spring produce in soils of inferior quality, but it is defective in lattermath, and the awns of the spike render it objectionable. E.)

which, from the spikets facing one way, becomes visible behind through its whole length, has a strong wood-like mid-rib, edged with a thinner and greener border, as in *Poa rigida*.

SEA WHEAT. (DWARF SEA WHEAT GRASS. (Welsh: *Corwenith-wellt y morfin*. E.) *Poa loliacea*. Huds. Relh. Sandy sea shores.

A. June—July.*

* It may be here observed that the devastation made amongst the cultivated kinds of grain has been fully proved to be caused both by pernicious vegetable and animal influence. That very destructive blight, the *Mildew* or *Rust* in corn, is now ascertained by the microscopical observations of the Sir Joseph Banks and Mr. Bauer of Kew, to be occasioned by a minute parasitic fungus, *Uredo frementi*, allied to Persoon's division, "*peridio nullo, sporulis rotundis uniformibus*," which undermines the epidermis of the leaves and stalks, and bursts forth at different places in more or less linear, brown or blackish stripes. It is said the earlier crops are less liable to this injury than the latter. It first appears on the leaves of corn, early in the spring, in the form of rust or orange-coloured powder, afterwards becomes chocolate, and finally ripens black. The seeds of wheat are rendered so lean and shrivelled by the exhausting power of the fungus, that scarce any flour fit for making bread can be obtained by grinding them. How far such grains will answer the purpose of seed-corn, is disputed, though the Editor cannot but incline to favour the opinion that sound seed must be sown to insure a good crop of prime corn. An account of this species of blight, with excellent figures, may be seen in the Annals of Botany; and in an appendix to Curtis's Practical Observations on British Grasses. See also Mr. Kirby in Linn. Tr.; Felice Fontana's Essay, 1767; and the New Farmer's Calendar; vid. *Uredo*, and a further note on this important subject, With. vol. 4, p. 372. Nor may it be irrelevant to add that, among the insect tribe, the commonly reported enemy to grain is the *Grub*, (of the *Tipula* or *Crane-fly*), and the *Wire-worm* or *Root-worm*, of which there are several species; but in the 9th vol. of the Linn. Trans. we find an important paper, accompanied with a plate, of a nondescript insect, which the author, T. Walford, Esq. supposes to be the prevalent *Wire-worm* of Essex and Suffolk, so destructive in the months of October and November. "With their projecting jaws these insects cut round the outside grass, about an inch below the surface of the soil, to get at the young white shoot in the centre, which they eat; upon this, vegetation is immediately stopped, and the plant dies. They are also charged with eating the flour in the grains not yet drawn out of the soil; their habitations are the husks. From continued observations, Mr. Walford calculates the number of acres annually destroyed in England by these noxious insects to be not less than 60,000! Early ploughing is advised as the only preventive, and the free use of unslacked lime, the most probable remedy for this extensive devastation,—alarming indeed—did we not consider the miraculous power of increase in a single grain of wheat. In 1768, Mr. Charles Miller made experiments on the sowing of wheat and dividing the root, by which means were produced in one year, from one grain, 21,109 ears, which yielded three pecks and three quarters of clean corn, weighing 47 pounds and 7 ounces; and the number of grains calculated by the number in one ounce, might be 576,840, vid. Phil. Tr. v. 58. The fly, *Musca pumilionis*, introduces its eggs into the heart of the shoots of Rye, occasioning many to perish. A small moth also, *Pyralis secalis*, eats the culm of the plant, within the vagina. See Linn. Tr. ii. The wolf, and the weevil of Leewenhoeck, have been long noted for their depredations on different kinds of grain. The gelatinous larva of a saw-fly, *Tenthredo*, preys upon the upper surface of the leaves of Barley, occasioning them to wither. *Musca hordei*, of Bierkander, also assails the plant; and a small species of moth devours the grain when laid up in store, concealing its eggs in the corn, and perpetrating its ravages so clandestinely that millions may exist in a heap of corn, without an individual being suspected. Many minute insects which may be observed coursing about the ears of corn, as *Phalacrus corruscus*, (in *Retic. Segotum*), subsist on the *fungilli* that infest the grain; others attack the grain itself, as *Ecidomyia tritici*; others destroy these destroyers. Of such are the ruthless *Ichneumon* *minuti*, which, with their penetrating ovipositors, restrain within destined limits the infinite host of lepidopterous and other larvæ, searching even their most secret recesses. These larvæ actually form a nidus for the eggs of their exterminating foe; and thus, by

(*T. CRISTATUM*. Calyx elliptical, awned, keeled, obscurely ribbed: florets awned: spikets closely imbricated, two ranked, depressed, straight, stems simple.

E. Bot. 2267.

Root perennial, with very long, strong, and woolly fibres. *Stems* twelve to eighteen inches high, upright, flexuose, rigid, leafy, hairy at the top. *Leaves* strap-shaped, shortish, with long, close sheaths; upper surface sometimes hairy. *Spike* elliptic-oblong, compressed.

CRESTED WHEAT GRASS. (*T. cristatum*. Schreb. *Bromus cristatus*. Linn. E.) A rare grass; discovered by Mr. G. Don on steep banks and rocks, by the sea side, between Arbroath and Montrose. *E. Bot. E.)**

TRIGYNIA.

AMARANTHUS.† Flowers B. and F. on the same plant: blossom none: calyx three or five-leaved.

Barr. Fl. Stamens from two to five.

Fert. Fl. Caps. one cell, splitting all round; seed one.

A. BLITUM. Stamens three; flowers in lateral clusters, three-cleft; stem spreading; leaves egg-shaped.

(*E. Bot.* 2212. E.)—*Kniph.* 11—*Cum. Epit.* 236—*J. B.* ii. 967. 1—*Pet.* 7—*H. Or.* v. 30. 5—*Lob. Ic.* i. 250. 1—*Ger. Em.* 921. 4.

Seeds shining, black, convex on both sides. *Stem* trailing, branched, leafy, widely spreading. (In general habit resembles *Atriplex* and *Chenopodium*. *Fl. Brit. E.*) *Leaves* sometimes white or silvery in the middle, with or without a brown spot. *Linn.* *Leaves* alternate, the smaller egg-shaped, the larger somewhat rhomboidal, with a deep notch at the end, and usually a small projecting point, entire; with a strong mid-rib, and parallel ribs underneath. *Leaf-stalks* as long as the leaves. *Flowers* numerous. *Bunches* irregular, sessile, on small lateral branches, with small leaves interspersed. *Woodw.*

(SMALL GARDEN BLITE. WILD AMARANTH. E.) On rubbish. Ripton, Huntingdonshire. Mr. Woodward. Battersea Fields. Mr. Dickson. Near Parker's Piece, Cambridgeshire. Rev. R. Relhan. About Weymouth and Poole. Dr. Pulteney. On Sunderland Ballast Hills. Mr. Winch. E.)

A. Aug.

MONTIA.‡ Calyx two-leaved: Blossom one petal, irregular: Caps. one-celled, two-valved.

M. FONTANA.

Mich. 13. 2—*Cart.* 188—(*E. Bot.* 1206. E.)—*Vaill.* 3 4—*Pluk.* 7. 5—*Pet.* 10. 12—*Fl. Dan.* 131.

Stems succulent, trailing, crooked; white or tinged with pink, (radiating, two to four inches long. E.) *Leaves* rather fleshy, egg-shaped, opposite; two at

an agency at once powerful and minute, is mankind rescued from the horrors of famine, and a just equipoise in the economy of nature preserved. E.)

* (Its comparative merits, as a grass, for heath soils, are considerable. Hort. Gram. E.)

† (From *αμαραντος*, everlasting; the flowers being little subject to decay. E.)

‡ (In honour of Joseph MONTI, a physician of Bologna, 1719. E.)

each joint of the stem. *Flowers* on long or short crooked fruit-stalks rising from the bosom of the leaves. *Blossom* white, (minute, seldom entirely open, whence its English name, *Blinks*. E.) *Seeds* black, shining, dotted, reniform. Smith observes that the *capsules* have occasionally three valves, and three seeds. E.)

WATER CHICKWEED. BLINKS. (Welsh: *Dyfr-wlyddyn y ffynnon*. E.) Springs and watery lanes. Sometimes in wet ploughed lands. Wet heaths in Norfolk, frequent. Mr. Woodward. (On the summit of Salisbury Craigs, and on the banks below. Greville. E.) Hockley Pool grate, near Birmingham. Marazion Marsh, Cornwall, where it grows as large as the figure of Micheli, (possibly a distinct variety. Also observed by Mr. Gerard E. Smith, on turf near the boat-house, Sandgate East, Kent. A. May.

TILLÆA* *Calyx* with three or four divisions: *petals* three or four, equal: *Caps.* three or four, two seeds in each. Sm. E.)

T. MUSCO'SA. Trailing: flowers sessile, mostly three-cleft.

B. Bot. 116—Rose 2. 2—Mich. 20.

(The whole plant is smooth, so small and depressed that it only becomes remarkable by the ample reddish patches which it forms on dried sands. Sm. E.) *Stems* at first nearly upright, generally red. Rose. *Parts of fructification* never more than three. *Leaves* in pairs, succulent. *Floral-leaves* shaped like the other leaves, but smaller. *Stalks* considerably longer after flowering. (*Flowers* generally solitary, mostly three-cleft, sometimes four, or, according to Gærtner, five-cleft. *Petals* smaller than the calyx, awl-shaped. Fl. Brit. By cultivation the respective parts of fructification may be increased to five. E.)

MOSSY RED-SHANKS. Dry barren heaths, Norfolk and Suffolk. Mr. Woodward. A troublesome weed on the gravel walks at Holkham. Sir J. E. Smith. P. May—June.

HOLOSTEUM.† *Calyx* five-leaved: *Petals* five, jagged: *Caps.* one-celled, nearly cylindrical, opening at the apex.

H. UMBELLATUM. Flowers in umbels. (Leaves ovate, acute. E.)

Dicks. H. S.—(Hook. Fl. Lond. E.)—E. Bot. 27—J. B. iii. 361. 1—Rose 2. 4—Ger. Em. 595. 16—Park. 1338. 6—H. Ox. v. 22. 46.*

(*Stems* weak, partly decumbent, branched from the bottom only, four or five inches high, hairy and glutinous between the joints in the upper part. *Leaves* hardly an inch long, single-ribbed, glaucous, and rather succulent, quite entire at the edges; tapering at the base into short, broad, combined foot-stalks. *Flower-stalks* about five, umbellate; at length perfectly reflexed. Sm. E.) Whole plant smooth. *Stem* upwards bare of leaves. *Fruit-stalks* terminating, mostly pendulous, of various lengths, each with one flower. Woodw. *Petals* pale reddish; toothed at the end, but not deeply divided as in the *Cerastia*. *Stamens* three, sometimes more.

* (After TILLI, Professor of Botany at Pisa, 1723. E.)

† (This name has been explained, (though perhaps not very satisfactorily), by antiphrasis, from ὀλίστρεον; ὅλος all, and ὀστρεον, bones; being soft and totally without the hardness of bones. E.)

UMBELLIFEROUS JAGGED CHICKWEED. *Cerastium umbellatum*. Huds. Dicks. Hook. *H. umbellatum*. Linn. Willd. Sm. E.) Old walls, banks, and sandy corn-fields about Norwich, where it was first discovered by Mr. J. Pitchford. Rose. On walls about Bury. Sir T. G. Cullum, Bart. E.)
A. April—May.

POLYCARPON.* *Calyx* five-leaved: *Petals* five, small, egg-shaped: *Caps.* three-valved, many-seeded.

P. TETRAPHYL'LUM. Stem much branched, trailing; leaves in fours, inversely egg-shaped.

(E. Bot. 1031. E.)—Matth. 734—Barr. 534—J. B. iii. 366. 2—Lob. Adv. 196. 1.

(Root tapering. Stem spreading on the ground. Leaves rather succulent, dark green, smooth, on leaf-stalks, arranged in quaternate whorls. Panicles terminal, several times forked. E.) Sometimes without petals. Huds. It alters its habit so much by cultivation as hardly to be known at first sight. Woodw. (Flowers numerous, small, greenish. *Calyx* edged with white. Valves of the capsules spear-shaped, turned in at the edges. Fl. Brit. E.)

FOUR-LEAVED ALL-BEED. Dry sandy ground. Lymston, near Exeter. Mr. Newberry. (On the neck of the Isle of Portland, close to the shingly beach. Rev. Dr. Goodenough. E.)
A. May—Aug.

ENNEAGYNIA.

EM'PETRUM.† B. and F. flowers on separate plants. *Calyx* with three divisions: *Bloss.* three petals.
Barr. Fl. Stam. capillary. *Fert. Fl. Berry* with nine seeds.

E. NI'GRUM. Stems trailing; (leaves linear-oblong. E.)

Mill. Ill.—Dicks. H. S.—Ex Bot. 526. E.)—Fl. Dan. 975—Tourn. 421. 3—Matth. 154—Clus. i. 45. 2—Ger. Em. 1363—Park. 1485. 2—Cam. Epit. 77—J. B. i. a. 526.

A small shrub. Bark, the outer scaling off, brown; the inner yellow. Branches rough from the remains of the leaf-stalks. Bud terminal, of five leaves; the leaves membranous, hairy at the edge, producing five little branches, four of which are in a whorl. Leaves in fours, with a white strap-shaped keel. Flowers from the bosom of the leaves, sessile, solitary, surrounded by a floral-leaf; B. and F. on distinct plants; sometimes on the same; or, rarely perfect, with flowers. Floral-leaf with three divisions, forming a kind of outer cup. *Calyx* whitish. Fertile plant similar to the barren one. Stem redder. Leaves deep green, sometimes quinate. Pistil black. Berries brownish black. Linn. Leaves sessile, smooth above, glandular underneath, woolly at the edges, and rolled back so that the edges meet on the under side. *Calyx* segments concave,

* (From πολυς many, and καρπος, fruit, or seed; descriptive of its numerous seeds. E.)

† (From εν, in, or upon, and πέτρος, a rock; such being its natural station. E.)

very minutely serrated. *Petals* dark purplish red. *Anthers* full flesh-colour. (*Barren Flowers* : stamens capillary, from three to nine. *Fertile Flowers* : summits nine. Fl. Brit. E.)

BLACK-BERRIED HEATH. BLACK CROW BERRY. CRAKE BERRY. (Gaelic : *Preas-nam-Fiantag*. *Dearca-filthich*. E.) Moist mountains and dry heaths, both in the driest and most barren rocky soils, and in bogs and moorish grounds, Staffordshire, Derbyshire, the northern counties, and Scotland, frequent. S. April—May.*

* The Highlanders frequently eat the berries, as sometimes do children, but they are no very desirable fruit, and if taken in large quantities occasion head-ache. Grouse feed upon them. Boiled with alum they afford a dark purple dye. (In Iceland and Norway a sort of wine is prepared from them. Gunn. Norv. E.) Goats are not fond of the plant; cows, sheep, and horses refuse it,

CLASS IV.

TETRANDRIA.

MONOGYNIA.

(1) *Flowers of two petals and one seed : superior : INCORPORATED.*

DIP'SACUS. *Cal.* common, leafy : *Receptacle* conical ; chaffy :
Seeds like little pillars.

SCABIO'SA. *Cal.* common, of many leaves : *Receptacle* convex, somewhat chaffy : *Seed* crowned, enveloped in the cup.

(2) *Flowers of two petals, and two seeds. INCORPORATED.*

ERIOCAU'LON. Barren and fertile florets incorporated in the same head ; the former in the centre, the latter in the circumference.

Cal. common, many scales, compact, imbricated.

F. Caps. two or three celled, seeds solitary.

(3) *Flowers of one petal : beneath the germen,*

LITTOREL'LA Barren and fertile flowers on the same plant :
Bloss. four cleft.

B. Cal. four leaved : *Stam.* very long. †

F. Cal. none : *Bloss.* mostly four cleft : *Style* long :
Seed a nut.

CENTUN'ULUS. *Bloss.* wheel-shaped, expanding : *Cal.* with four divisions : *Caps.* one cell, cut round.

PLANTA'GO. *Bloss.* bent back as if broken : *Cal.* with four divisions : *Caps.* two celled, (rarely four. Sm. E.) bursting all round transversely.

EX'ACUM. *Bloss.* rather bell-shaped : *Cal.* four leaved :
Caps. two celled, compressed.

[*Gentiana campestris* and *filiformis*.]

(4) *Flowers of one petal, beneath ; and four naked seeds.*

[*Mentha.*]

(5) *Flowers of one petal ; above the germen.*

SANGUISOR'BA. *Bloss.* flat : *Cal.* two leaved : *Caps.* quadrangular, (of one cell, not bursting : *Stam.* dilated upward. *E.*)

(6) *Flowers of one petal ; superior ; and two berries.* STELLATE-RU'BIA. *Bloss.* bell-shaped : *Fruit* like two pulpy berries, united.

GA'LIUM. *Bloss.* flat, four-cleft : *Fruit* nearly globular, suberose : *Florets* all perfect.

ASPER'ULA. *Bloss.* tubular : *Fruit* nearly globular, (suberose, without a crown. *E.*)

SHERAR'DIA. *Bloss.* tubular : *Fruit* crowned : *Seeds* tridentate.

(7) *Flowers of four petals ; beneath the germen.*

EMPIME'DIUM. *Nectariferous* petals four, reclining : *Cal.* four leaved : *Pod* one cell, (superior, many-seeded. *E.*)

[*Cardamine hirsuta.* *Evonymus europæus.* *Parietaria officinalis.*]

(8) *Flowers of four petals ; above the germen.*

COR'NUS. *Cal.* quadridentate ; deciduous : *Drupa* a nut, two-celled : inferior.

(9) *Flowers incomplete ; beneath the germen.*

(ISNAR'DIA. *Cal.* four-cleft ; superior : *Caps.* quadrangular, of four cells, crowned by the calyx. *E.*)

ALCHEMIL'LA. *Cal.* eight cleft : *Seed* one, (surrounded by the perianth. *E.*)

PARIETA'RIA. *Cal.* four-cleft : *Seed* one, elongated. (Some flowers without stamens, their calyx remaining unaltered. *E.*)

URTI'CA. *Flowers* barren and fertile on the same, rarely on distinct plants.

B. Cal. four-leaved : *Nectary* central ; cyathiform.

F. Cal. two-valved : *Seed* one ; glossy.

(10) *Flowers incomplete ; above the germen.*

VIS'CUM. *Flowers* barren and fertile on distinct plants,

B. Cal. with four divisions : *Anthers* fixed to the calyx without any intervening filaments.

HIPPOPHAE. Flowers barren and fertile on distinct plants.

Bloss. none.

B. Cal. with two divisions.

F. Cal. two cleft : *Berry* one seeded.

[*Thesium alpinum.* *Ophrys Corallorhiza.*]

DIGYNIA.

BUFFONIA. *Bloss.* four petals : *Cal.* four leaves : *Caps.* one cell; two seeds and two valves.

(**ALNUS.** Flowers barren and fertile on the same plant. *Pericarp* naked, not winged as in *Betula.* *E.*)

BETULA. Flowers barren and fertile on the same plant. *Cal.* three cleft : *Bloss.* with three divisions.

B. Cal. containing three flowers.

F. Cal. containing three flowers : *Seeds* compressed, solitary, with a membranous border on each side.

MYRICA. Flowers barren and fertile on the same, or on distinct plants. *Catkins* scales concave, crescent-shaped : *Bloss.* none.

F. Berry one-seeded.

CUSCUTA. *Bloss.* four-cleft ; companulate : *Cal.* four-cleft : *Caps.* two-celled ; cut round.

[*Herniaria glabra.* *Gentiana campestris* and *filiformis.* *Galium molugo* and *Aparine.*]

TRIGYNIA.

BUXUS. Flowers barren and fertile on the same plant.

B. Cal. three leaves : *Bloss.* two petals : *Germen* an imperfect rudiment only.

F. Cal. four leaves : *Bloss.* three petals : *Caps.* with three beaks and three cells : *Seeds* two.

TETRAGYNIA.

ILEX. *Bloss.* one petal, wheel-shaped : *Cal.* four-toothed : *Berry* four seeded : *Style* none.

SAGINA. *Bloss.* four petals : *Cal.* four leaves : *Caps.* one celled, four valved, with many seeds.

(**MOENCHIA.** *Pet.* four : *Caps.* one-celled, and one-valved, with eight teeth. *Cal.* four-leaved. *E.*)

(RADIOLA. *Pet.* four: *Caps.* of eight cells and eight valves: *Cal.* of one leaf, in twelve segments. E.)

TILLÆA. (See Triandria Trigynia.)

POTAMOGETON. *Bloss.* none: *Cal.* four-leaved: *Seeds* four; sessile.

RUPPIA. *Bloss.* none: *Cal.* none: *Seeds* four; pedicellate.
[*Holosteum umbellatum.*]

MONOGYNIA.

DIP'SACUS.* *Cal.* common many-leaved; *proper.* superior, of one leaf: *Receptacle* chaffy, spinous.

D. FULLONUM. Leaves sessile; serrated; chaff reflexed.

(*E. Bot.* 2080. E.)—*Fl. Dan.* 965—*Kniph.* 12—*Tourn.* 265—*Fuchs.* 224—*Trag.* 847—*J. B.* iii. 73—*Matth.* 661—*Dpd.* 735. 1—*Lob. Obs.* 487. 1—*Ger. Em.* 1167. 1—*Park.* 984. 1—*H. Ox.* vii. 36. 1—*Zanon.* 68.

(*Stem* about five feet high, angular, and prickly. *Leaves* large, oblong, spear-shaped, combined at the base, jagged, with prickly ribs. *Flowers* in oval heads, purplish, numerous, small. Scales of the *Receptacle* hooked, and much harder than those of *D. sylvestris*. E.)

(About hedges and rude uncultivated spots; but whether ever found really wild in Britain appears doubtful. Sir J. E. Smith suspects the specific difference between this and *D. sylvestris*; and appears almost satisfied that *D. laciniatus* of Linnæus is only a variety of *D. fullonum*. E.)

FULLER'S TEASEL. MANURED TEASEL. (*D. fullonum*. Linn. Syst. Veg. Willd. Sm. Hook. E.) *D. fullonum* β. Linn. Sp. Pl. Huds.

B. July.†

* (From *δίψω*, to be thirsty; in allusion to the leaves forming cavities capable of containing water. E.)

† It is cultivated for the use of clothiers, who employ the heads with crooked awns to raise the nap upon woollen cloths, as kerseymeres, &c. For this purpose they are fixed round the circumference of a large broad wheel, which is made to turn round whilst the cloth is held against them. The plant flowers in June and July, and the heads are collected in August. (They are sorted in bundles, the large heads being called kings, the next size middlings, and the smallest minikins. Thus do they come ready sized to the fulling-mills. When the seeds are ripe the heads are fit for cutting. They are much cultivated in the Keynsham Hundred of Somersetshire; also on the Gloucestershire side of Bristol. An acre will produce about 160 bushels, worth about one shilling each. The Journal of a Naturalist affords an interesting history of the Teasel, whence we learn it was probably introduced by some of the numerous foreign artisans, who have at various times sought refuge here, or been encouraged to settle in England. Our woollen manufactory could scarcely have made any progress without this plant. The manufactory of cloth was carried on in England during the reign of Richard I.; but it was not until after the tenth of Edward III., that the Teasel was cultivated to any extent with us: for about that time the exportation of English wool was prohibited, and the wearing of foreign cloth opposed by government. Flemish artisans were then encouraged to settle here, with every liberty and protection to carry on their trade, as an incorporate body; and particular towns began to furnish peculiar colours—Kendal, its green—Coventry, its blue—Bristol, its red, &c., and from this period we may date the

D. SYLVESTRIS. Leaves in opposite pairs, united at the base ; chaff straight.

Jacq. Austr. 402—*Curt.* 202—(*E. Bot.* 1032. *E.*)—*Blackw.* 50—*Fuchs.* 225—*J. B.* iii. 74—*Matth.* 662—*Dod.* 735—*Lob. Obs.* 487. 3—*Ger. Em.* 1167. 2—*Park.* 984. 2—*Ger.* 1005. 1.—*H. Or.* vii. 36. 3.

(A plant of more slender habit than the preceding, about four feet high. The leaves at the base of each pair form a cavity capable of retaining a considerable quantity of water long after heavy showers. *E.*)*

Leaves spear-shaped, the mid-rib set with hooked prickles, as is also the stem. Common calyx leaves of various lengths, rising up and some overtopping the flowering head.

WILD TEASEL. (Welsh: *Teilai gnylit.* *D. sylvestris.* *Linn. Syst. Veg.* Willd. Sm. *D. fullonum* a. *Linn. Sp. Pl.* *Huds. E.*) Uncultivated

cultivation of teasel. Weeding, draining, and other requisites, demand a constant labour throughout the year, and hence a certain expense is incurred ; but remuneration, loss, or great profit, circumstances must determine ; nor, perhaps, is there any article grown more precarious or mutable in its returns. The heads are cut from the plant with a knife peculiarly formed, and then fastened to poles for drying. A moist season proves highly injurious: they cannot be stacked like corn, as pressure destroys the spines, and a free circulation of air is required to dry them thoroughly. Shelter must be sought, so that the very bed-rooms of cottages are crowded with them in dripping seasons, and they are basked in the sun with every passing gleam ; which is attended with more trouble than the farmers care to bestow upon them. In casualty weather teasels have been known to vary from 4*l.* to 22*l.* the pack ! from 5*l.* to 7*l.* may be the average price ; 10,000 heads to the pack. An average crop for two years may be seven packs to the acre ; which at 6*l.*, will bring 42*l.* ; expences 13*l.* 16*s.*, leaving a clear profit for two years upon an acre (after deducting among other outgoings rent 4*l.*) 28*l.* 4*s.* This is a great temptation to venture on cultivation ; yet the manufacturers are so sensible of the risk and trouble, that they prefer purchasing to growing it. The teasel affords a rare instance of natural production being applied to mechanical purposes in the state in which it is produced. The object designed to be effected by its use cannot be supplied by any artificial contrivance, successive inventions having been abandoned as defective or injurious. Many heads are fixed in a frame, and with this the surface of the cloth is teased, or brushed, until all the ends of the wool are drawn out (so as to bring a regular pile or nap) by the fine hooks with which the terminating points of the chaffy substance of the teasel are furnished. To accomplish the proper dressing of a piece of fine cloth consumes from 500 to 2000 heads. *Vid.* also *Pl.* ii. 4, of that work. Country people are still said to cure agues in various parts of England by a singular remedy obtained from this plant, which can only be supposed to operate on an excited imagination. If the heads be opened longitudinally in the autumn, one small worm may frequently be found in each head, whence naturalists have named it the *Vermis solitarius Dipsaci*. Of these, three, five, or seven, (always an odd number,) must be collected, sealed up in a quill, and worn, with good faith, as an amulet which will prevail against the ague. *E.*)

* This species affords a fine exemplar of what is termed the *connate leaf*. An ingenious author remarks, "The reservoirs formed by the united leaves collect the rain; sometimes containing half a pint or more, which sustains the plant during long drought. In desert countries, the weary and fevered traveller would often exchange the whole of his property for the luxury of a draught from one of these water-lodging plants ; but in this country the moisture is of more use to the plant itself than to the passenger or to the possessor." Indeed this curious structure would appear, in the present instance, to be rather destructive than preservative of animal life, for in the basins formed by these connate leaves many insects are drowned ; so that *Dipsacus* may rank among the vegetable *Muscicape*. *E.*)

places, wet hedge banks. I have not found it north of Derbyshire and Nottinghamshire. Mr. Wood. (In High-wood-lane, near Pidford, Isle of Wight. Mr. W. D. Snooke. On the sea coast, Anglesey. Welsh Bot. South side of Duddingston Loch, near Edinburgh. Greville. Very frequent in the lanes about Dover, and other parts of Kent and Sussex; also by the sides of the road between Hatton and Warwick; and about Brislington, in Wick grounds, and other places near Bristol. E.)

B. June—Aug.*

D. PILO'SUS. Leaves on leaf-stalks, with appendages at the base.

Curt.—Jacq. Austr. 248—(*E. Bot.* 877, E.)—*Blackw.* 124. 2—*H. Ox.* vii. 36. 5—*Park.* 984. 4—*Matth.* 663—*Dod.* 735. 3—*Lob. Obs.* 487. 2—*Ger. Em.* 1168. 3—*Blackw.* 124. 1—*J. B.* iii. 75. 2.

(*Stem* slender, three or four feet high, branched, angular, leafy, rough, with ascending hooked prickles. *Leaves* ternate. *Flowers* in small hirsute globular heads, white. E.)

SMALL TASEL SHEPHERD'S STAFF. Hedges and damp places. (Out of St. Benedict's Gate, Norwich. At Matlock. Near Deptford, in the London-road. Rev. Dr. Goodenough. Fl. Brit. Frequent in Norfolk and Suffolk. Mr. Woodward. Between Ipswich and Bury St. Edmond's. Mr. Winch. Lane sides below the Vicarage, Painswick. Mr. O. Roberts. Emscote, on the road to Lillington, Warwickshire. Perry. In the Short and Long Lith, Selborne, Hants. White's Nat. Hist. Lilleshall Abbey, Shropshire. Near the Lady-well in a lane leading from Norton to the Watling-street, Northamptonshire. E.) B. Aug.

SCABIOSA.† *Cal.* common, many-leaved: *proper* double, superior: *Recept.* naked or chaffy: *Seed* wrapped in the proper calyx.

S. SUCCISA. Blossoms four-cleft, equal: stem undivided: branches approaching: leaves spear-egg-shaped: (flowering heads nearly globular. E.)

Ludw. 193—*Curt.*—(*E. Bot.* 878. E.)—*Fl. Dan.* 219—*Fuchs.* 715—*Trag.* 246—*J. B.* iii. 11—*H. Ox.* vi. 13. 7—*Blackw.* 142—*Matth.* 623—*Dod.* 124. 1—*Lob. Obs.* 295. 2—*Ger. Em.* 726—*Park.* 492. 1—*Ger.* 587.

(*Root* oblong, blackish, abruptly bitten off by the adversary, for envy of its imaginary benefit to mankind. E.) *Stem* and *leaves* rough with hair, generally entire, but those on the stem sometimes serrated. *Flowers* in globular heads. *Proper Cup* quadrangular, hairy, with four shallow clefts, the segments fringed with white hair. *Nectary*, inclosing the germen, crowned with a concave, glandular receptacle, armed with four or five strong reddish black bristles. Besides the above apparatus, each floret is furnished with a green spear-shaped floral-leaf, terminated by a white taper bristle. *Blossom* bluish purple, flesh-coloured, or white; sometimes double. (*Stem* about a foot high. E.)

DEVIL'S-BIT SCABIOUS. (Irish: *Oir ballagh.* Welsh: *Clafsrlllys gwreidd-don.* E.) Fields and pastures frequent. P. June—Aug.†

* (Even the ass declines this plant, and its dried stems usually remain through the winter. A small speckled moth makes a secure domicile in its spinous head. E.)

† (From *scabies*, an eruptive disease which certain species were supposed to cure. E.)

‡ The dried leaves are used to dye wool yellow or green, Linn. (This plant

216 TETRANDRIA. MONOGYNIA. ERIOCAULON.

S. ARVEN'SIS. Blossoms four-cleft, radiating; leaves wing-cleft, and jagged; stem rough with strong hairs.

Curt. 288—(*E. Bot.* 659. *E.*)—*Kniph.* 3—*Ludw.* 21—*Sheldr.* 98, &c. *Fl. Dan.* 447—*Fuchs.* 716—*Trag.* 242—*J. B.* iii. 2. 1—*Ger.* 583. 4—*Blackw.* 185—*H. Ox.* vi. 13. 1—*Ger. Em.* 720. 4—*Dod.* 122. 1—*Lob. Obs.* 291. 1—*Ger. Em.* 719. 1—*Park.* 485. 1.

Proper Cup quadrangular, hairy; with four small teeth. *Nectary* inclosing the germen; crowned with a concave receptacle, set with shining glands on the inside, and armed with eight or twelve spear-shaped, serrated, greenish, bristly substances, hairy at the base. *Florets in the circumference* larger, with four unequal clefts. *Florets in the centre* regular. *Leaves* rough with hairs and tubercles: spear-shaped, and more or less jagged; some of them wing-cleft. *Blossom* a little woolly; blue, purple, or white. *Stem* a yard high.

(The variety mentioned by Haller, with leaves entire and smooth, is reported to have been found (Aug. 1825,) in the Isle of Wight. *Vid. Mag. Nat. Hist.* i. *E.*)

FIELD SCABIOUS. (Irish: *Cahan Guisain.* Welsh: *Clafrllys*; *Clais*; *Pentlas.* *E.*) Pastures and corn-fields. *P.* July—Aug.*

S. COLUMB'ARIA. Blossoms five-cleft, radiating; root-leaves simple, scoloped; stem-leaves compound, strap-shaped.

(*E. Bot.* 1311. *E.*)—*Kniph.* 12—*Walc.*—*Ger.* 582. 2—*Column. Phytob.* 22—*Clus.* ii. 2. 2—*Dod.* 122. 3—*Lob. Obs.* 290. 2—*Ger. Em.* 719. 2—*Park.* 484. 1—*J. B.* iii. 4—*Matth.* 970—*Fl. Dan.* 314—*H. Ox.* vi. 14. 20.

(*Root* woody, bristly at the crown. *Stem* twelve to eighteen inches high. *Leaves* and *flowers* smaller and more delicate than in the last, from which this species is decisively distinguished by the five-cleft blossom. *Sm. E.*) *Root* long, tapering to a point. *Outer* segments of the outer blossoms much larger than the inner. *Flowers* bluish lilac.

SMALL SCABIOUS. (Welsh: *Clafrllys bychan.* *E.*) Dry hilly pastures, frequent; (less so in Scotland. *E.*) *P.* June—Sept.†

ERIOCAULON.† *Cal. common*, an imbricated head with many leaves.

B. florets in the centre, monopetalous.

F. in the circumference, two-petalled. *Caps.* two-celled. (*Seeds* solitary. *E.*)

furnishes a familiar example of the *Radix præmorsa*, premorse, terminating abruptly, or bitten off root, but not uniformly so. Dr. Drummond observes this is only the case when the plant is above a year old, for during the first year it is fusiform; after that it becomes woody, dies, and rots; the upper part excepted; this causes the eroded or bitten appearance, while new lateral branches shooting out from the portion left, compensate the want of the old main stem. Thus do science and truth dispel superstitious errors; for in ages darkened by monkery, the faithful were taught implicitly to believe in respect to the pretended virtues of this plant, that "the divell for the envie that he beareth to mankind bitt it off, because it would be otherwise good for many uses." *E.*)

* Sheep and goats eat it. Horses and cows are not fond of it. It is slightly astringent, bitter, and saponaceous. (When held over the fumes of tobacco, the colour of the blossoms has been observed to give place to a beautiful green. *E.*)

† Horses, sheep, and goats eat it. *Papilio Maturna* and *Livia Scabiosæ* may be found upon all the species.

‡ (From *εριον*, wool, and *καυλος*, a stem; though not applicable to the British species. *E.*)

E. SEPTANGULA'RE. Stalk with seven angles, sheathed at the base; leaves sword-shaped.

(Hook. Fl. Lond. 52. E.)—*E. Bot.* 733—*Phil. Tr.* lix. p. 243—*Pens. Hebr.* i. 39, at p. 314.

Grows under water. Stalk one foot to one foot and a half high, the top rising above the water when in flower. Lightf. Fringe of the calyx white. Petals white, with a black spot on the limb. Hope.

Dr. Hope sent the plant to Linnæus, who, as he afterwards informed me, said it was *E. decangulare*; but Dr. Hope in his excellent description, represents the stalk as having only seven angles, and sheathed at the base. *Phil. Tr.* v. 59. If the figure of Plukenet, 409, 5, is to be relied upon, the American plant, which Linnæus called *E. decangulare*, wants the sheath on the stalk; the proportion of the leaves is also different; and from the character given to it by Linnæus, the stalk has ten angles, and the barren flower four stamens, so that I am disposed to believe that the British plant is really a different species, and have named it accordingly. (The beautiful and singular structure of the roots, jointed as a *Conserva*; the leaves pellucid and cellular; and the terminal head of flowers, with their purple exerted anthers, and curious scales, are admirably delineated in Fl. Lond. E.)

WREATHED PIPE-WORT. (*E. decangulare*. Lightf. E.) *Nasmythia articulata*. Huds. Discovered by Mr. Robertson, a pupil of Dr. Hope, in a small lake in the Isle of Sky, in 1768. In two or three small fresh water lochs about a mile west of Loch-sligachan, in the Isle of Skye, but particularly in a small lake called Loch-na-Caiplich close to the road side between Sligachan and Drynoch, in such abundance, that the white fibres of the roots are thrown on the edges of the loch as sea weeds on the sea shore. Lightfoot. It recently appears, by a note in the handwriting of Dr. Walker, of Edinburgh, that this rare plant so early as Sept. 11, 1764, in a small lake by the road side, leading from Sconsar to Giesto, in Skye, attracted the attention of Sir John Macpherson, who with the zeal of an ardent naturalist, leaped from his horse, waded into the water, and brought out the prize: as recorded in Hook. Scot. In lakes and ditches about Cunnamara, Ireland. Mr. T. Mackay. Sm. Eng. Fl. Abundant in the lakes of Rosses, Donegal. E. Murphy, Esq. E.) P. July—Sept.

SHERARDIA* Bloss. one petal, tubular, long: Seeds two, naked, crowned by the calyx, as with three teeth.

S. ARVEN'SIS. All the leaves in whorls; flowers terminal.

Curt. 315—(*E. Bot.* 891. E.)—*Fl. Dan.* 439—*Blair.* 4. 6—*Pet.* 30. 10—*J. B.* iii. 719. 3—*Barr.* 766, and 541. 1.

The whole plant is harsh and rough with hairs, from four to seven inches high. (Stems several branched, spreading, mostly decumbent, square, leafy. Flowers in one umbel. E.) Leaves five or six in a whorl. Floral-leaves terminating, compressed, deeply divided into eight parts, and inclosing three or four florets. Calyx with four, five, or six teeth. Blossom blue or purple: tube very long, segments egg-shaped. (This slender little plant is of a dark green, and has much the habit of a *Galium* Grev. E.)

* (In honour of Dr. William SHERARD, born at Bushby, Leicestershire, 1659, sometime Consul at Smyrna, a distinguished patron of science, reputed author of *Schola Botanica*, founder of the botanical professorship at Oxford, and the collector of twelve thousand species of dried plants. Died 1728. E.)

LITTLE FIELD-MADDER. LITTLE SPUR-WORT. (Welsh: *Sherardia glas*; *Corweiddrydd*. E.) Corn and fallow fields, common. A. May—Sept.

ASPERULA.* Bloss. one petal, tubular: Seeds two, globular, without a crown, suberose.

A. ODORATA. Leaves eight in a whorl, spear-shaped; flowers in panicked tufts, on fruit-stalks.

Dicks. H. S.—E. Bot. 755. E.)—Ludw. 146—Cart. 249—Sheldr. 29—Kniph. 1—Clus. ii. 175. 2—Dod. 355. 2—Lob. Obs. 464. 2—Ger. Em. 1124. 1—Park. 563. 1—H. Ox. ix. 22. row 1, fig. the 4th.—Fl. Dan. 562—Ger. 966—Trag. 496—Pet. 30. 9—Blackw. 60—J. B. iii. 718. 3—Mill. 55. 2.

Fruit rough with hooked bristles. Panicle with three divisions. Leaves varying, from five to nine in a whorl, (bright green, spreading, an inch long, so rough at the edges as to adhere to the clothes. E.) Flowers of a beautiful snowy white, and, when a little magnified, appearing sprinkled with shining, frosted particles. Calyx not very evidently toothed. From five to ten inches high. (Stems simple, annual, angular, smooth, leafy. E.)

SWEET WOODRUFF. WOODDEROWFFE, as spelt in some old authors. The repetition of the double letters affords great amusement to children learning to spell. (Irish: *Luss Moleas*. Welsh: *Llys yr eryr perarogl*. E.) Woods in Herts. Mr. Woodward. Near Armingdale Wood, Norwich. Mr. Crowe. About Chepstow, plentiful in the hedges. Mr. Pitt. Woods and shady places. At the Leasowes, near Halesowen. (Woods about Garn, Denbighshire. Mr. Griffith. In Langton Copse, and Broadly Wood, near Blandford. Pulteney. Beach wood on Lansdown. Rev. J. H. Ellicombe. Anglesey. Welsh Bot. Roslin and Auchindenny woods, abundant; and Braid Hermitage, near Edinburgh. Greville. E.)

P. May.†

A. CYNANCHICA. Leaves four in a whorl, strap-shaped: upper leaves opposite, very unequal; stem upright: flowers four-cleft; (fruit smooth. E.)

E. Bot. 33—Kniph. 11—J. B. iii. 723. 2—Col. Ecphr. 297. 1—Pet. 30. 12—H. Ox. ix. 22. 9.

Leaves frequently pointing one way, sometimes five in a whorl. Woodw. (Fruit smooth, not rough with hairs, as represented by the fig. in Col. Ecphr. Sm. E.) About five or six inches high, the lower part trailing. Leaves unequal in size, (thickly besetting the stems. Blossoms pale rose colour, streaked with deeper red lines, disposed in terminal panicked tufts. E.)

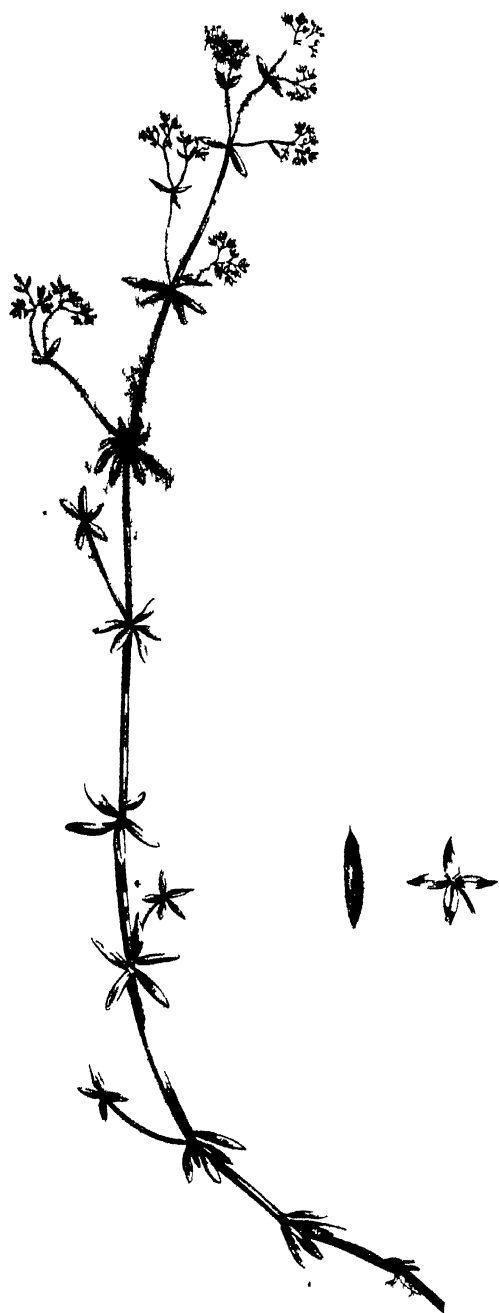
SQUINANCY-WORT. QUINSY-WORT.‡ Limestone hills, and high chalky soils. Swaffham, Norfolk. Newmarket Heath. Dunstable Hills. Mr. Woodward. Salisbury Plain. (Painswick hill, Gloucestershire. Mr. O. Roberts. About Dover, Box-hill, and Newmarket. Mr. Winch. E.)

P. June—July.

* (Diminutive of *asper*, rough; descriptive of the fruit; though not applicable to every species. E.)

† The scent of it is said to drive away ticks and other insects. Linn. It gives a grateful flavour to wine; (and is used for that purpose in Germany. E.); cows, horses, sheep, and goats eat it. (The strongly aromatic flowers infused in water far excel in flavour the teas imported from China. Willich. Sir J. E. Smith remarks that the fresh herb has no smell; but as soon as it begins to dry it exhales a pleasant and lasting fragrance like that of new hay, verging towards the flavour of bitter almonds. E.)

‡ (From its once supposed efficacy in curing such disorders. E.)



GAL'IUM.* *Bloss.* one petal, four-cleft, campanulate, flat, short : *Seeds* two, nearly globular, beneath ; suberose.

(1) *Seeds smooth.*

G. CRUCIATUM. Stem hairy, only branched at the base ; leaves hairy, egg-shaped, four in a whorl ; fruit-stalks with two or three leaves, (corymbose. E.)

E. Bot. 143—*Blackw.* 76—*Walc.*—*Dod.* 357. 1—*Gars.* 235—*Lob. Obs.* 467. 2—*Ger. Em.* 1193. 1—*Ger.* 965—*Park.* 566—*H. Ox.* ix. 21. row 2. 1. *Cruciata*—*J. B.* iii. 717 and 2.

The structure of the flowers is liable to many variations. They are generally perfect, but sometimes barren flowers intervene. *Blossom* segments from three to five, though mostly four. *Stamens* three to five, always corresponding in number with the segments of the blossom. *Seeds* one or two, the second frequently abortive. *Stem* undivided upwards, (twelve to eighteen inches high. E.) *Bunches* from the bosom of the leaves, divided and subdivided. (*Blossom* small, yellow, about eight on a stalk. Lightf. E.) When the seeds ripen, the leaves bend inwards and cover them so effectually, that birds cannot get at them without tearing away the leaves.

CROSS-WORT BED-STRAW. MUGWORT. MUGWEED. *Valantia cruciata.* Linn. Lightf. *G. cruciata.* Scop. (With. Hook. E.) Hedge banks and other rough places ; often in meadows amongst mowing grass. Plentiful from Newcastle to within a few miles of Worcester, but further south it is scarce. Mr. Baker. King's Park, Edinburgh, on the right hand side of the foot-road to Duddingston. Greville. P. May—July.

G. PALUSTRE. Leaves unequal, strap-spear-shaped, entire, blunt, four, five, or six in a whorl : stems spreading, branched upwards.

(*Hook. Fl. Lond.*—*E. Bot.* 1857. E.)—*Fl. Dan.* 423—*Pet.* 50. 5—*Ger.* 967.

From one to two feet high. *Leaves* scarcely rough to the touch. *Blossoms* white, numerous, on lateral and terminal fruit-stalks ; forming a sort of umbel cloven into three parts, and again subdivided.

Var 2. Leaves strap-shaped, four in a whorl.

Resembles the preceding, but smaller and hardly half so high. Found on dry ground in Dudley Wood. The leaves being blunt and quite entire sufficiently distinguish this from *G. montanum* and *G. procumbens*.

WHITE LADIES' BED-STRAW. WHITE WATER BED-STRAW. (Welsh : *Gwendon* ; *Gwenwydd y gors.* E.) Banks of rivulets and pools, moist meadows, wet commons. P. July—Aug.

G. WITHERINGII. Leaves strap-spear-shaped, fringed with hairs, about four or five in a whorl ; stem feeble, rough : leaves reflexed.

(PLATE XXVIII.—(*E. Bot.* 2206. E.) •

About eight inches high, not at all branched, except sending off fruit-stalks from the whorls of leaves. *Leaves* five in a whorl ; turned back, some so much so as to point downwards ; serrated with hairs, pointed with a hair,

* (From γαλα, milk ; from its effect in curdling that liquid. E.)

not with a rigid bristle or prickle. *Blossom* purple on the outside whilst young. *Anthers* red brown. *Pistil* very short, cloven down to the base. (On the stem may be observed a few pellucid hairs, decidedly pointing upwards, though perhaps rather too strongly and too numerous expressed in former impressions of our figure. The roughness of the stem when stroked upwards is moreover occasioned, as noticed by Smith, by the "minute hooks, curved downwards," with which the four angles are beset. These bear a general resemblance in form to the prickles on a common Briar or Bramble, or the beak of an eagle, are semi-transparent, but in our specimens, scarcely perceptible to the naked eye, and therefore not expressed in our plate. We have renewed our examination, and been led to the above result by a stricture in Eng. Fl. and further take leave to remark that the leaves on the stem of our plant are more decidedly reflexed than in the fig. of E. Bot. as observed also by Prof. Hooker.

ROUGH HEATH BED-STRAW. *G. Witheringii*. Fl. Brit. *G. montanum*. With. to Ed. 5.; though the Author then suspected his plant might prove a new species, distinct from *G. montanum* of Linn. which opinion has been confirmed by Sir J. E. Smith, who has been pleased to name the plant after its discoverer. E.) On high, but boggy, parts of Hands-worth Heath, near Birmingham, (since drained and inclosed. E.) (On Bank meadow, Rose Castle, Cumberland. Bishop of Carlisle, in E. Bot. Walkington Wood, near Beverley. Teesdale, in Bot. Guide. Below Castle-head wood, near Keswick. Mr. Winch. Ochill hills, above Dunning, Perthshire. Mr. D. Don. East end of the lake at Forfar. Mr. Maughan. Hook. Scot. E.) July.

(*G. SAXA'TILE*. Leaves egg-spear-shaped, six in a whorl; dagger-pointed; stem prostrate, smooth, much branched: fruit granulated.

E. Bot. 815. E.)—*Pet.* 30. 6.

Leaves sometimes nearly strap-shaped. Fl. Brit. *Stems* and *branches* prostrate, smooth, matted together and spreading on the ground. *Flowering stem* from two to six inches high. *Stems* twisted, cylindrical, but with four rounded corners. *Leaves* four in a whorl at the bottom, five about the middle, and six at the top of the plant, unequal in size, edged with fine prickle-shaped glands; keel smooth. *Flowers* in umbels, or panicles, lateral and terminating, one or two, or three from the whorls at the joints of the stem. *Blossom* white, sometimes purplish on the outside. *Anthers* yellow. *Pistil* nearly as long as the stamens, divided down to the base. *Seeds* not rough, but with a granulated surface, (reddish after the flowers fall. *Leaves* varying in size. E.)

(**SMOOTH HEATH BED-STRAW.** *G. saxatile*. Linn. Sm. Willd. Hook. Grev. *G. procumbens*. With. Sibth. Abbot. Purt. E.) *G. montium*. Gmel. *G. montanum*. Huds. On heaths and mountains, frequent.

P. July.

G. ULIGINOSUM. Leaves in sixes, spear-shaped, bristle-pointed, rigid, bowed backwards; serrated with recurved prickles; blossoms larger than the fruit.

(Hook. Fl. Lond.—E. Bot. 1972. E.)—*Kniph.* 10—*Barr.* 82—*J. B.* iii. 216. 2.

(*Stems* fragile, about a foot high, supporting themselves on other plants. E.) *Leaves* free from hairs, terminating in a thorn-like point. *Seeds* smooth. Linn. *Leaves* sometimes seven or eight in a whorl. Huds.

Blossom white, with a tinge of rose-colour. Hall. The leaves are disposed to turn back and point downwards, as in *G. montanum*.

Var. 2. Upper leaves six, lower ones four in a whorl; not dagger-pointed. All the leaves strap-shaped, but not ending in a thorn-like point. Flowers in a three-cleft umbel, the middle spoke but half the length of the other two. Anthers purplish-red.

Found growing with *G. palustre*, but does not at all agree with that, and probably will prove a distinct species.

The prickles at the edge of the leaves and the sharp dagger-like point readily distinguish the first of these from *G. montanum*, and the smooth stem separates it both from *montanum* and *palustre*.

MARSH GOOSE GRASS. (ROUGH MARSH BED STRAW. (Welsh: *Gwendon arw y migyn*. E.) Meadows, pastures, and wet heaths. On the lower bog at Chisselhurst. Ray. (Not uncommon in Norfolk. E. Bot. On Beamish Moor, near Madomsley, and near Winch Bridge, Durham. Winch Guide. Feckenham Bog, Worcestershire: Coleshill Bog, Warwickshire. Purton. Green's Grove, Hatton; do. Perry. Anglesey. Welsh Bot. E.)

G. PUSILLUM. Leaves eight in a whorl, rough with hairs, strap-shaped, tapering to a point; whorls crowded at the base of the stem; fruit-stalks forked.

E. Bot. 74.

Stems numerous, angular, a finger's length. *Leaves* six or eight in a whorl, strap-shaped, or between spear and strap-shaped, sharp, rough, as are also the stems, with expanding hairs. *Branches* few, alternate. *Whorls* of leaves often so thickly set as partly to tile the stems. *Panicle* thin set, mostly terminating, upon twice forked fruit-stalks. Linn. *Leaves* seven or eight in a whorl; tiling the lower part of the stem. *Flowers* white. *Seeds* small, smooth. Huds. Angles of the stem, and edges and mid-ribs of the leaves rough with expanding hairs. *Leaves* rarely so many as eight. Woodw. Approaches near to *G. uliginosum*, but may be known from that by the blossom not being pinky on the outside, by the fruit-stalks being either smooth or only hairy and not rough and harsh with prickles; but notwithstanding these differences, I doubt whether the two plants which our Botanists have called *pusillum* and *uliginosum* be really distinct species. (Pubescence variable. *Flowers* small, numerous. E.)

LEAST GOOSE GRASS. LEAST MOUNTAIN BED STRAW. Limestone hills, near Kendal, Westmoreland. Near the bath at Matlock. Sir J. E. Smith. (Fields at Shefford, Bedfordshire. Abbot. Common in Cumberland, and Lancashire. Mr. Woodward. Peebles on Tweed, and Settle, Yorkshire. Mr. Winch. Habbies How, in the Pentland hills. Greville. Near the Lake of Killarney. Rev. Mr. Butt. E.) P. July—Aug.

G. ERECTUM. Leaves mostly eight in a whorl; spear-shaped, with fine prickly serratures; panicles with three divisions; stem rough, flaccid. Huds. (Stem weak, slightly hairy under each joint. Fruit smooth and even. Sm.

E. Bot. 2067. E.)

Stems rather upright; swollen at the joints; quadrangular, the edges roughish; somewhat hairy, branched; flowering branches opposite.

Leaves eight, sometimes six in a whorl; sessile, spear-shaped, and between strap and spear-shaped; bare. The terminal *panicle* divided into three. *Flowers* white, four-cleft. *Seeds* small, smooth. Huds. *Leaves* in whorls, from four to five inches distant from each other; reflexed; serratures directed towards the point of the leaf, and not bowed back as in the rest of the rough-leaved species. St. (*Stems* upright when they meet with support, but weak and flaccid, much branched, leafy, panicled, many-flowered; often quite smooth, sometimes more or less clothed with soft hairs. E. Bot. E.)

UPRIGHT GOOSE GRASS. (UPRIGHT BED STRAW. E.) Meadows and pastures. Heydon Common, Norfolk. Mr. Bryant. (In dry hedges at Portslade, Sussex. Mr. W. Borrer. E. Bot. Causeway near Portobello, Edinburgh. Greville. E.) P. June—July.

(G. CINE'REUM. *Leaves* six or eight in a whorl, linear, bristle-pointed, with marginal prickles all pointing forward. Stem weak, much branched, smooth. Fruit smooth. Blossom taper-pointed.

Allion. Ped. 77. 4.

Stems many, diffuse, very much branched, from a span to a foot high, angular, glabrous, shining, swollen at the joints. *Leaves* plane, glabrous, margin obsoletely serrulate. *Branches* and *branchlets* opposite. *Flowers* white, corymbose.

GREY SPREADING BED STRAW. *G. cinereum*. Allion. *G. diffusum*. Hook. Near Kinnaird, Angus-shire, and on the banks of the river Leith, near Slaford, three miles from Edinburgh. Mr. G. Don.

P. Aug. Sm. Hook. E.)

(G. ARISTATUM. *Leaves* six in a whorl, stalked, lanceolate, flat, reticulated with veins, bristle-pointed, with minute marginal prickles pointing forward. Stem much branched, spreading, smooth. *Seeds* smooth, kidney-shaped, separated. Blossom taper-pointed.

Barr. Ic. 356—Bocc. Mus. 75.

Stems numerous, a foot high, square. *Leaves* sometimes only four or five in a whorl; the largest above an inch long, pliant, deep green on both sides, smooth except the edges, which are very minutely prickly. *Flowers* white, in compound *panicles*, with perfectly smooth, slender, but not capillary stalks. *Seeds* becoming kidney-shaped as they ripen, with a central vacancy, smooth, or slightly granulated.

BEARDED BED STRAW. *G. aristatum*. Linn.: with which he afterwards confounded his *G. levigatum*, which is the same with *G. sylvaticum*, the *G. aristatum* of many succeeding authors. Communicated by Mr. G. Don, (as *G. erectum*.) from hilly ground in Angus-shire. Sm. E.)

G. MOLLUGO. *Leaves* eight in a whorl, egg-strap-shaped, dagger-pointed: somewhat serrated, greatly expanded; stem feeble; branches greatly expanding. (*Seeds* smooth, globular. E.)

Fl. Dan. 455—(E. Bot. 1673. E.)—Ger. 967. 4—Fuchs. 281—Lob. Ic. 802. 2—J. B. iii. 716. 1—Lob. Obs. 468. 1—Ger. Em. 1118. 2—Pet. 30. 4—Matth. 921.

Stem four-edged, branched; thickest just above the joints, nearly smooth. *Leaves* from six to eight in a whorl; unequal in size, oblong-egg-shaped,

a little hairy on the back and at the edges. Flowers very numerous, on fruit-stalks rising from the whorls of leaves; generally two long and two short flowering branches from each whorl. Blossom white. Seeds two, smooth; one generally much larger than the other. In a cultivated state it grows quite upright, strong, and three or four feet high.

Var. 2. Leaves very entire, reflexed; seldom exceeding three or four inches in height. Scop. *Mollugo montana minor*, *Galio albo similis*. R. Syn. 224, seems at least to comprehend this variety as well as *G. procumbens*. Mulvern Hills. Stokes.

(Var. 3. *G. scabrum*. With.; but not of Jacquin, according to Smith. *G. Mollugo* β. Fl. Brit.)

Stems and leaves closely beset with short soft hairs. Fruit-stalks smooth; Dr. Stokes, by whom this hairy variety was observed in a hedge row in marley soil on the side of the Red-house lane, near Worcester. E.)

MADDER GOOSE GRASS. WHITE LADIES' BED STRAW. GREAT BASTARD MADDER. (GREAT HEDGE BED STRAW. E.) Hedges, roughs, and heaths, frequent. (On open chalky hills it is of more humble growth. E.) P. June—Aug.

G. TRICORNE. (Leaves about eight in a whorl, lanceolate, with reflexed marginal prickles, like those on the stem: stalks axillary, three-flowered: fruit sharply granulated, drooping. Sm.

E. Bot. 1641. E.)—Vaill. 4. 3.

Fruit-stalks bearing three greenish white flowers curved downwards. Leaves from six to eight; upper surface smooth, keel rough. Fruit roughish, beset with a number of minute tubercles, but which do not terminate in hairs. Pollich. Pedicels sometimes with one leaf at the base. Florets sometimes all three, not unfrequently two, though commonly only one, hermaphrodite. Stems upright, a foot high, or more; not branched. Whole plant harsh and rough. Leaves serrated with strong reflexed prickles.

THREE-FLOWERED GOOSE GRASS. (ROUGH-FRUITED CORN BED STRAW. *G. spurium*. With. Ed. 3 and 4. *G. tricornis*. With. Ed. 2. Neither *Valantia aparine* of Linn. nor exactly *G. spurium* of Huds. or of Linn. Sm. E.) Corn-fields. Monk Tryston, between Ferrybridge and Selby, on a lime-stone soil, plentiful; and near Wetherby, Yorkshire. Mr. Woodward. Corn-fields, Pucklechurch, Gloucestershire. Mr. Swayne. (Fields near Carisbrook, Isle of Wight. Mr. Turner. Fulwell Hills, near Sunderland. Mr. E. Robson, in Winch Guide. E.) A. June—July.

G. VERUM. Leaves eight in a whorl, strap-shaped, grooved; flowers in dense panicles.

(Curt.—E. Bot. 660—Fl. Dan. 1146. E.)—Kniph. 6—Ludw. 39—Mill. 139. 1—Sheldr. 61—Fuchs. 196—J. B. iii. 720. 1—Trag. 492—Dod. 355. 1—Loh. Obs. 467. 3—Ger. Em. 1126. 1—Park. 564. 1—H. Oz. ix. 21. row 2. 1. *Galium*—Matth. 1131—Ger. 967. 1—Blackw. 435—Pet. 30. 8.

Stems with large joints, cylindrical (eighteen inches high, somewhat woody, square. E.), striated, rather downy. Leaves smooth, rolled back at the edges; from five to nine in a whorl, but generally eight upon the principal stem. Blossom segments greatly expanded. Styles cloven more than half way down. Blossom yellow; numerous, (smelling of honey, very strongly in the evening, or before rain. Fruit small, globose, blackish. Sm. E.)

YELLOW LADIES' BED STRAW. CHEESE RENNING. PETTY MUGUET. YELLOW GOOSE GRASS. (Irish: *Balah Chaise*. Welsh: *Briwydd felen*; *Ceilion*; *Llys y cywer*; *Briger y twynau*. Gaelic: *Rù*. E.) Sides of fields and roads, frequent. When within the influence of the sea air extremely diminutive. P. July—Oct.*

G. ANGLICUM. Leaves about six in a whorl, spear-shaped, pointed, edged with prickles, reflexed; stems wide-spreading, rough with prickles pointing downwards. Huds. (Flower-stalks cloven; fruit granulated, without hairs. E.)

(E. Bot. 384. E.)—*Kniph.* 10—*Ray Syn.* 9. 1.

Stems a foot long, feeble, four-sided, rough when stroked upwards. *Leaves* seven in a whorl, spear-shaped, dagger-pointed, rough, especially at the edge. *Flowering branches* opposite, short. *Fruit-stalk* smooth, two or three-flowered. Linn. *Stems* one foot to one foot and a half high, spreading, four-cornered, branched; *flowering branches* opposite. *Leaves* bare (except at the edge), sometimes seven in a whorl. Huds. *Leaves*, the prickly hairs at the edge pointing forwards, sometimes a few scattered on the surface; those of the *branches* generally in pairs, as in Ray's figure. *Branches* rough. *Fruit-stalks* smooth, generally dividing into three, one of them supporting two flowers. St. *Blossom* greenish yellow, smaller than the fruit, which, though less smooth than that of the other species in this subdivision, is still not hispid.

(**WALL BED STRAW.** *G. anglicum*. Huds. *G. parisiense*. Relh. not of Linn. *Aparine minima*. Ray Syn. 225. Tournefort's plant with a dark purple blossom cannot belong to this. (On walls and dry sandy ground. E.) At Hackney, on a wall. H. Ox. iii. p. 333. Ray.—Sandy ground between Dartford and Northfleet. On a wall at Farningham, Kent. Hudson.—On the walls of Binham Church, Norfolk. Mr. Crowe: (and on ruins in several parts of that county, Suffolk, and Cambridgeshire. Sir J. E. Smith. E.) A. June—July.

(2) *Seeds hispid.*

G. BOREALE. Leaves four in a whorl, spear-shaped, smooth, three-fibred: stem upright: fruit rough with hooked bristles.

Dicks. H. S.—Fl. Dan. 1024—*E. Bot.* 105—*Kniph.* 5—*Pet.* 30. 7—*J. B.* iii. 716. 3.

Root creeping, reddish. *Leaves* sometimes nearly an inch long, with five strong ribs; paler beneath. *Fruit* of two reniform seeds. E.) The three strongly marked ribs on the leaves afford a decided character. *Leaves* egg-spear-shaped, four in a whorl, but only two or three at the base of the fruit-stalks. *Blossoms* white, very numerous, crowded.

CROSS-WORT MADDER. CROSS-LEAVED GOOSE GRASS OR BED STRAW. Among rocks, and by rivers and lakes, chiefly in the north. Mountains in Westmoreland and Wales. Near Pooley Bridge, by

* The flowers coagulate boiling milk. The French prescribe them in Hysterical and Epileptic cases. Boiled in alum water they tinge wool yellow. The roots dye a very fine red, not inferior to madder, and are used for this purpose in the Island of Jura. Pennant, 1772, p. 214. Sheep and goats eat it. Horses and swine refuse it. Cows are not fond of it. This plant is subject to a disease, in which the stem and branches are beset with fleshy balls, about the size of a pea, hollow within, and covered with a purplish skin.

Ullswater, Cumberland. Near the Ferry at Winander Meer. Mr. Woodward. Banks of the river near Down. Mr. Brown. Rocks about Strid, near Bolton Abbey. Mr. Wood. Trigfylchi Rocks; also about half a mile from Llanberris, in the gravel by the side of the second rivulet in the way to Llanrwst. Mr. Griffith. (Banks of the Tees, at Winch bridge, and near Egleston, Durham; on the banks of the Skern, near Darlington. Mr. W. Backhouse, jun. Winch Guide. Bowling Bay, Dalbeth, Carmyle, &c. Glasgow. Hopkirk. Breadalbane woods. Arnot, in Hook. Scot. Magilligan, Derry. E. Murphy, Esq. E.) P. July—Aug.*

G. APARINE. Leaves eight in a whorl, spear-shaped: keel rough with reflexed prickles: joints downy: fruit bristly.

Curt.—Woodv. 269—Fl. Dan. 495—(E. Bot. 816. E.)—Sheldr. 13—Vaill. 4. 4—Dod. 353—Lob. Obs. 464. 3. Aparine—Ger. 963. 1—Ger. Em. 1132—Park. 567—H. Ox. ix. 22. row 2. 1. Aparine—Pet. 30. 11—Blackw. 39—Matth. 807—Fuchs. 50—J. B. iii. 713—Trag. 494—Walc.

(Stem four-cornered, the angles set with reflexed prickles, by which it readily adheres to other plants, and thus supports itself to an extent of several feet. Leaves eight or ten in a whorl, between strap and spear-shaped, rough above, smooth underneath, the edges and the keel set with reflexed prickles, and so hispid as to adhere to whatever they touch. Branches opposite. Calyx in this species certainly wanting. Curt. E.) (Blossoms white, small, rather few. E.)

CATCHWEED. GOOSE GRASS. CLEAVERS. (Irish: *Hariff Airmeirigh*. Welsh: *Cynfafan*; *Gwlydd y perthi*; *Llys yr hudd*. E.) Hedges, very frequent (but not in clay lands. E.) A. May—Aug.†

G. VERRUCOSUM. Leaves six in a whorl, spear-shaped, with marginal prickles pointing forward: flower-stalks axillary, three-flowered: fruit warty, pendulous.

E. Bot. 2173.

Root slender, turning reddish when dried, and retaining the cotyledons long at its summit. Stems several, somewhat branched, angles rough with reflexed prickles. Leaves with marginal prickles all pointing forward, not backward, by which invariable character, and the large pyramidal tubercles that cover the fruit, this species is clearly distinguished from *G. tricornis*. Blossom straw-coloured. E. Bot. (The two lateral flowers

* The roots afford a red dye for woollens.

† The branches are used by the Swedes instead of a sieve to strain milk. Young geese are very fond of them. The seeds may be used instead of coffee, (though it would scarcely answer in this country even for children to gather them. E.) The plant is eaten by horses, cows, sheep, and goats. Swine refuse it. Linn. The expressed juice of the stem and leaves, taken to the amount of four ounces, night and morning, is very efficacious in removing many of those cutaneous eruptions which are called, although improperly, Scorbatic. It must be continued for several weeks. (Mr. Holdich describes *Hariff* as a very scrambling weed, running to the length of seven or eight feet, increasing in weight of branches and foliage as it obtains the light, and getting through whatever it grows with. In clay countries it is scarcely known, though it be one of the very worst weeds, where it abounds. The rough seeds adhere to whatever woollen stuff they touch. They are also heavy enough to resist dressing, and big enough to escape the screen. They are so hard as to resist the mill-stones, and are equally impracticable to horses when mixed with oats. Drags and rakes are said to be ineffectual in destroying this pernicious intruder: the seeds should be encouraged to vegetate, and then the young plants quickly destroyed by the plough. E.) *Sphinx stellatarum*, *S. Euphorbie*, (and *Elpenor*. E.) feed upon the different species of *Galium*.

on each peduncle generally sterile, falling away and leaving their pedicels, one on each side the large verrucose fruit.

WARTY-FRUITED BED-STRAW. *Valantia aparine*. Linn. This plant was first accurately ascertained as a native of Britain by Mr. G. Don, who observed it in corn-fields in the Carse of Gowrie. Mr. Miller also finds it near Malton; and probably in various other situations it may have been confounded with *G. tricornis*. A. June—Aug. E.)

(**G. SPURIUM.** Leaves about eight in a whorl, lanceolate, with reflexed marginal prickles, like those on the stem. Stalks axillary, many-flowered, cymose. Fruit smooth, erect.

E. Bot. 1871.

Resembles *G. aparine* in habit, but the leaves sometimes shorter. Sm. Hispid on the upper surface. Peduncles much longer than the leaves, bearing several flowers. Partial flower-stalks not bent back with the fruit. Hook.

SMOOTH-FRUITED CORN-BED-STRAW. In corn fields. About Forfar, sparingly. Mr. G. Don. A. June—July. E.)

RUBIA.* Bloss. one petal, bell-shaped. Berries two, one-seeded, united, (smooth, pulpy. E.)

R. PEREGRINA. Leaves four or more, in a whorl, elliptical, smooth, shining on the upper surface: blossom with five divisions.

(E. Bot. 851. E.)—H. Or. ix. 21. 2—Pet. 30. 3.

Root branched, penetrating deeply into the fissures of the rocks; its outer bark red. Stems several, climbing, four-cornered, the angles set with prickles pointing backwards. Leaves spear-shaped, somewhat waved at the edge, even and shining on the upper surface, prickly at the edges and along the mid-rib on the under side, from three to six in a whorl, but mostly five. The plant in climbing up the rocks and through the shrubs supports itself by means of the prickles on the angles of the stem and under the margins and mid-ribs of the leaves. It seldom produces more than one perfect seed, perhaps there are not more than two or three instances on any one plant, in which both the seeds attain perfection. The whole superficies of the plant does not die in the winter, but some of the old stem remains alive, which puts forth fresh shoots in the spring. The leaves which first appear in the spring are rather elliptical, as represented in the figure of *Petiver*. Swayne. (In general habit resembles the plants of the preceding genus. Flowers greenish yellow, in forked terminal panicles. Leaves evergreen, as we have particularly ascertained in the plants which trail through black-thorns and other shrubs to the height of eight or ten feet on St. Vincent's rocks. Stamens four, five, or six. Petals four or five-cleft. Leaves four or five in a whorl. E.) Smith considers the *Rubia* of Haller 708, to be *R. tinctorum* of Linnæus, which has egg-spear-shaped leaves, rough on the upper surface; flowers, often, though not always, four-cleft, and without any calyx. E.)

WILD MADDER. (Welsh: *Gwrcidrudd gwyllt*. • *R. peregrina*. Linn. Huds. Willd. Sm. *R. anglica*. Huds. Ed. i. *R. sylvestris aspera*. Ray Syn. and With. Ed. 2. *R. tinctorum*. With. Ed. 3 to 6. Hull. Common about Teignmouth: in profusion on the rocks below Brookfield, near that

* (*Ruber*, red; from the colour which pervades its root. E.)

town. E.) Hedges near Exmouth. In the Isle of Wight. Stokes Wood, opposite St. Vincent's Rocks, Bristol. Rev. G. Swayne. (On Tunbridge Rocks. Rev. Dr. Goodenough. At Chepstow. Fl. Brit. Sea coast, Anglesey, below the Old Park, near Beaumaris. Welsh Bot. Rocks on the north side of Llanmaen Mawr; and Llandidno Rocks, Carnarvonshire. Mr. Griffith.

We agree with Mr. W. Christy, that the plant of Leigh Woods, near Bristol, is precisely the same with that of Devonshire, "climbing over the hedges and attaining a length of many feet." In other situations, as at Lydden Spout, near Dover, and by the Signal House, St. Margaret's Bay, it assumes so different an appearance, as to be viewed by that gentleman as a questionable species: "a low trailing plant, whose branches seldom exceed six inches in length." E.) P. June—July.*

EX'ACUM. Bloss. four-cleft, salver-shaped, tube globular: Cal. four leaves, or with four divisions: Caps. two-furrowed, two-celled, many-seeded, opening at the apex: (Stam. shorter than the limb. E.)

E. FILIFORME. Blossoms with four-clefts: on long fruit-stalks: leaves sessile: stem thread-shaped, forked. •

(Hook. Fl. Lond. 86. E.)—E. Bot. 235—Fl. Dan. 324—Vaill. 6. 3.

Blossom yellow, generally closed. Sir J. E. Smith first removed this plant from the genus *Gentiana*, and very properly, for it always stood as an exception to that. From the size of a pin to four inches high. In a sunny day the flower opens fully and is cruciform. It has no similitude to the *Gentians* either in taste or in habit. The leaves, (not an inch long) are so slender, and so close to the stem, that they are only discernible on nice inspection. (Capsule, in reality, of but one cell; and the receptacle of the seeds is formed by the incrassated inflexed margins of the valves. Hook. E.)

LEAST GENTIANELLA. MARSH CENTURY. (*Gentiana filiformis.* Linn. Huds. E. filiforme. Sm. Willd. Hook. E.) Gravelly places inundated in winter. E.) Marshes in Cornwall, near St. Ives. In boggy places in Dorsetshire. Pulteney. Also not unfrequent in Devonshire in similar situations. Sand banks between St. Blazey Bridge and the Par Sand, Cornwall. On the bays between Bodmin and Lostwithiel. Mr. Stackhouse. (On Horsham Common, Sussex, abundant. Mr. Borrer, in Bot. Guide. On Dursley Island, Cork. Mr. Blashford, in Wade. E.) A. July.

LITTORELLA.† Barren and fertile flowers on the same plant.

B. Bloss. four-cleft: Cal. four leaved: Stam. very long.

F. Bloss. unequally three-cleft: Cal. none: Style very long: Nut one-seeded.

L. LACUS'TRIS.

* (Dr. Horne pronounces Madder to be a powerful emmenagogue. It is an ingredient in the Icteric decoction of Ed. Pharm. The root yields a valuable and subtle red colour. It is much used by dyers and calico printers, and is so penetrating, that, (according to experiments in Phil. Tr.) it tinges the bones of animals who have it mixed with their food. The chief supply is now imported from Holland. These remarks more strictly apply to the cultivated kind (*R. tinctorum*), but our native plant is supposed to possess the same qualities in a lesser degree. E.)

† (Diminutive of *litus*, the shore; the plant delighting in such moist situations. E.)

*(Hook. Fl. Lond. 168—E. Bot. 468. E.)—Fl. Dan. 170—Pluk. 35. 2—H. Ox. viii. 9. 30—Gisek. 21—Dill. Musc. 81; but the substances on the leaves marked (a. a.) are thought to be *Polypes*.

Fertile flowers two, sometimes three, at the base of the stalk of the barren flower. (Flower somewhat resembling that of *Plantago*. Plant growing in thick tufts. E.) Leaves rush-like, flattish, convex underneath, (all radical, one to two inches high, sometimes rough with hairs. Fl. Brit. E.) Barren flower terminal. Relh. (This plant is truly amphibious, growing in most of the lakes of North Wales several feet under water, but it never flowers except when on shore, or in water about one inch in depth. Griffith. It is frequent near the margins of many of our Highland lakes, but being generally immersed, seldom flowers. The elongated stamens, which, from their slender make, hang down, and the style which shooting upwards meets them half way, afford a beautiful illustration of the Linnæan doctrine. Br. E.)

PLANTAIN SHOREWEED. (Welsh: *Beisdonell merlllyn*. E.) Marshy places in a sandy soil, (and very abundant by the margins of alpine lakes, in such situations forming a green carpet, as on the shores of Loch Lomond. Hook. E.) At Hainford. Mr. Crowe. On the margins of Oulton Broad by Lowestoft, plentifully; and on the bank at the south end of Bala Lake, Merioneth. Mr. Woodward. In a watery lane near Penzance, by Mr. Wenman. Mr. Stackhouse. (Crosby Marsh, near Liverpool. Dr. Bostock. At Prestwick Carr, Northumberland. By Derwent-water. Mr. Winch. Coleshill pool, Warwickshire. Purton. E.) P. July—Aug.

PLANTAGO.* Bloss. four-cleft, permanent, border reflexed: Cal. four-cleft: Stam. extremely long: Caps. two-celled, cut round, superior.

P. MAJOR. Leaves egg-shaped, smooth: flower stalk cylindrical: spike imbricated with florets, tapering: (seeds numerous. E.)

Curt.—Fl. Dan. 461—(E. Bot. 1558. E.)—Blackw. 35—Woodv. 14—Matth. 479—Dod. 107. 1—Loh. Obs. 162. 2—Park. 493. 2 & 1—H. Ox. viii. 15. 2—Pet. ii. 4. 1—Trag. 225. 1—Fuchs. 38—J. B. iii. 502—Ger. 338.

Stalk from nine to eighteen inches high, the flowering spike about equal in length to the naked part; rather rough with short hairs. Leaves with seven or nine ribs, (numerous, broad, all radical, on channelled stalks as long as themselves, margins wavy, or variously toothed. Flowers small, whitish. Anthers pinky. E.)

WAY-BREAD. GREATER PLANTAIN. (Welsh: *Llyriad mwyaf*; *Henllydan y ffordd*. Gaelic: *Gcuah Phàdruic*. E.) Road sides, very common.

P. June—Aug.†

* (From the flatted appearance and form of its leaves, somewhat resembling the sole of the foot. E.)

† Sheep, goats, and swine eat it. Cows and horses refuse it. (If the temperate ass, who is contented with the most ordinary weeds, and makes his humble repast on what the horse and other animals refuse, has a preference for any vegetable, it is for the Plantain; for which he is often seen to neglect every other herb in the pasture. The green leaves are astringent and frequently applied to cuts. Plantain leaves bruised and rubbed on the part affected will effectually reduce the swelling, pain, and inflammation occasioned by the bite or sting of insects. The Highlanders, according to Mr. Lightfoot, ascribe great virtues to this plant in healing wounds ther, by the fresh leaves, or an ointment

Var. 1. (β Linn.) Leaves three-ribbed.

Tab. Ic. 731—Ger. 339—J. B. iii. 505. 3.

Much smaller than the preceding. Leaves rough. Stalk not more than one inch and a half high. Spike small in proportion. (Common in corn-fields, Norfolk and Suffolk. Mr. Woodward. E.) About Shirehampton and Kingsweston, Bristol.

Var. 2. *Toothed*. Petiv. Leaves with large teeth towards the base. St.

Pet. 4. 2—Park. 494. 5. d.

Var. 3. (*Rosea*. Bauh. Var. 8. Sm. E.) Spike leafy. Flower-leaves disposed in a pyramidal or rose-like form.

Ger. 340. 5—H. Ox. viii. 15. 3. b. c.—Park. 494. 5. b.—J. B. iii. 503. 1—Ger. Em. 420. 4, upper branch—Pet. 4. 4, upper branch.

Park. 494. 5. c.—H. Ox. viii. 15. 3. a.—J. B. iii. 503. 1—Pet. 4. 4, lower branch.

(The *rose-like* and the *pyramidal* often rise from the same root. They are sometimes met with in gardens, and in rich soil greatly increase in size.

Ripton, Huntingdonshire. Mr. Woodward. On Dudley Lime rocks.

Aug. E.)

Var. 4. *Panicled*. *Panicula sparsa*. Ray. Bauh. Var. γ . Sm. Stalk branching into a panicle.

Dod. 107. 2—Lob. Obs. 162. 4—Ger. Em. 420. 6—J. B. iii. 503. 2—Park. 494. 5. a.—Pet. 4. 5—H. Ox. viii. 15. 4.

Ripton, Huntingdonshire. Mr. Woodward. E.) Bedingham, near Buntingford. Mr. Stone.

P. MEDIA. Leaves egg-shaped, pubescent: spike and stalk cylindrical: (seeds solitary. E.)

Curt. 252—Fl. Dan. 581—(E. Bot. 1559. E.)—Walc.—Cam. Epit. 262—Fuchs. 39—J. B. iii. 504. 1—Matth. 480—Clus. ii. 109. 1—Dod. 107. 4—Lob. Obs. 162. 3—Ger. Em. 419. 2—J. B. iii. 504. 2—H. Ox. viii. 15. 6—Pet. 4. 3—Ger. 338. 2—Trag. 226. 1—Park. 493. 3.

(Root woody. E.) Stalk from five to ten inches high; cylindrical. Flowering spike very dense, shorter than the naked part of the stalk. Leaves (all radical, E.) mostly five-ribbed, often toothed, spear-egg-shaped, or quite egg-shaped; sometimes variegated with pale yellow stripes.

HOARY PLANTAIN. Road sides, and pastures, mostly in chalky or marley soil. The variegated kind at Hawford Bridge, near Worcester. Stokes.

P. June—Aug.*

P. LANCEOLATA. (Leaves spear-shaped; tapering at each end: spike nearly egg-shaped, woolly at the base; flower-stalk angular. E.)

(E. Bot. 507. E.)—Curt. ii. 15—Fl. Dan. 437—Blackw. 14—Walc.—Dod. 107. 3—Lob. Obs. 163. 1—Ger. Em. 422. 1—Park. 496. 1—H. Ox. viii.

prepared from them. Hence Plantain is denominated *Stantius*, the "*Healing Plant*." The seed is a favourite food of birds; and, as an alternative, is considered essential to the health of canary-birds and others confined in cages. E.)

* (A high authority justly denounces the Hoary Plantain as "a great and lasting nuisance in fine grass-plant," and states that it is most effectually destroyed by a drop of vitriolic acid on the crown of the root, which it never long survives; but we fear that the remedy will be found applicable only to such lawns as may be sheared with scissors. E.)

232 TETRANDRIA. MONOGYNIA. PLANTAGO.

15. 9—*Pet.* 4. 6—*J. B.* iii. 505. 1—*Trag.* 225. 2—*Ger.* 341. 1—*Matth.* 481—*Anders.*

Stalk about a foot high. *Root* appearing as if bitten off, (rather woody. E.) *Spike* one inch long, or not so much. *Leaves* strap-spear-shaped, erect, ribs five to seven; often obscurely dentate towards the base. *Anthers* white. The stalks continue to grow after the flowering is over, and sometimes shoot out to the length of two feet or more. (*Bracteas* blackish, one to each flower, which gives the whole spike a black aspect, especially when not in flower. Grev. The spikes affect similar transformations to those of *P. major*; the *bracteas* being occasionally, by luxuriance, converted into leaves; and the heads in other instances assuming a globular form. E.)

RIBWORT PLANTAIN RIB GRASS. (Irish: *Cruah Phadruig*; *Slán Luss*. Welsh: *Llyriad Llwynhidydd*; *Llwyn y neidr*; *Pennau r gwyr*; Gaelic: *Slán-lus*. E.) Meadows and pastures, very common. P. June.*

Var. 2. Leaves narrow, three-ribbed. St.

Ger. Prox. 12—*Ger.* 339. 4—*J. B.* iii. 505. 2—*Park.* 496. 3—*Pet.* 4. 7.

Mountainous and barren places.

Var. 3. *Foliosa*. Summit of the stalk surrounded with leaves longer than the spike. Woodw.

Ger. 341. 2—*J. B.* iii. 506. 1—*H. Or.* viii. 15. 10.

Near Leeds. Dr. Stokes—Ripton, Huntingdonshire. Mr. Woodward.

Var. 4. Spike compound, having two or three heads. Leers.

Clus. ii. 110—*J. B.* iii. 506. 2—*H. Or.* viii. 16. 10—*Pet.* 4. 8.

Isle of Thanet. Ray.

P. MARITIMA. Leaves strap-shaped, channelled, mostly entire; woolly at the base; spike and stalk cylindrical, (the latter longer than the leaves. E.)

(*Hook. Fl. Lond.* 193. E.)—*Fl. Dan.* 243—*E. Bot.* 175—*Dod.* 108—*Lob. Obs.* 163. 2—*Ger. Em.* 423. 3—*Park.* 598. 1—*H. Or.* viii. 17. 34—*Ger.* 343. 3—*J. B.* iii. 511. 3—*Ger. Em.* 425. 1.

Root wood-like, inversely conical at the crown. *Stalk* five or six inches high. *Spike* one to one inch and a half long, bent at a right angle before flowering. *Leaves* fleshy, convex on the lower, channelled on the upper surface, generally entire, but sometimes in maritime situations, with a few minute teeth. *Floral-leaves* keeled. *Blossom*, tube woolly. *Anthers* yellow.

* Linnæus says it is eaten by horses, sheep, and goats, and that cows refuse it; but Haller attributes the richness of the milk, in the famous alpine dairies, to this plant and *Athenilla vulgaris*.—The total absence of this plant in marshy lands is a certain criterion of the wretched quality thereof. In proportion as such soils are meliorated by draining, this plant will flourish and abound. It is often sown and cultivated for pasture but does not answer the purpose well without a mixture of clover or other grasses. Sheep will eat it either green or dried, provided it be well gotten. Rev. S. Dickenson. When it grows detached from other plants, as it frequently does by the sides of footpaths, I have never seen cattle touch it, but they certainly do eat it mixed with other herbage. (In rocky situations, as among the mountains in Wales, it serves to prevent the soil from being washed away, and has been known to keep a large district fertile, which would otherwise have been entirely barren. Salisbury. *Arctia Plantaginis*, and *Livia Plantaginis*, are found upon the different species. E.)

SEA PLANTAIN. (Welsh: *Bara can y defaid*; *Llyriad y mor*; *Gwerog*. E.) Sea coast, (but by no means confined thereto; abundant, according to Prof. Hooker, by some fresh-water lakes, as Loch Lomond; and sometimes on the sides of mountains. E.) Near Barnard Castle, thirty-five miles from the sea. Mr. Robson. (North Shore, near Liverpool. Dr. Bostock. Frequent on the coast of Durham and Northumberland. Mr. Winch. Fields about Port Gwylan, Carnarvonshire, covered with it. Penn. Wales. ii. 200. E.) P. June—July.*

Var. 2. *Narrow-leaved*. Leaves thread-shaped.

A much smaller plant than the preceding, and flowering earlier. I found it in the Isle of Wight, and going out of blossom in the beginning of June. Leaves about two inches long. Stalk cylindrical, slender, not striated, four inches high. Spike one inch long, cylindrical, not closely crowded with florets.

(Anglesey. Welsh Bot. E.)

Var. 3. *Flat-leaved*. Leaves flat, ribbed, very sparingly toothed.

J. B. Hist. iii. 506. 2, well represents the leaves, but the spikes are too short.

Leaves five inches long, flat, five-ribbed. Stalk about five inches high, cylindrical. Spike two inches long, cylindrical, bent at a right angle before flowering. Floral-leaves with a mid-rib, but not keeled.

Near the Bristol Channel. Rev. G. Swayne. Sea coast, Yarmouth. Mr. Woodward.

(A larger variety, but much resembling the above, with leaves approaching to spear-shaped, we have gathered on the rocks east of Teignmouth. E.)

Var. 4. *Mountain*. Huds. var. γ .

J. B. Hist. iii. 506. 2.

Smaller than either of the above varieties. The leaves from two to three inches high, one eighth of an inch wide.

On Cwn Idwell. Mr. Griffith.

P. CORONOPUS. (Leaves linear, pinnatifid; flower-stalk cylindrical; capsule of four single-seeded cells. E.)

Fl. Dan. 272—(*E. Bot.* 892. E.)—*Pet.* 4. 10—*Fuchs.* 449—*Trag.* 99—*J. B.* iii. 509—*Blackw.* 400—*Mutth.* 493—*Dod.* 109. 1—*Lob. Obs.* 239. 2—*Ger.* 427. 1—*Park.* 502. 1—*H. Or.* viii. 17. 31.

Spike truly pendulous before it flowers. Linn. Leaves wing-cleft, the segments very unequal; spreading flat on the ground in form of a star. Stalk from four to seven inches high. Spikes one and a half to two inches long, cylindrical (numerous, dense, on spreading hairy stalks. E.) Calyx, segments wrapping over each other, deeply divided, fringed at the outer edge. Anthers terminated by a small spear-shaped transparent membrane.

* (Approved as a favourite and fattening food of sheep; and probably so esteemed by our ancestors, the first of the ancient British designations above cited meaning "the sheep's favourite morsel;" and the last, "the suet-producing." Mr. Davies also remarks, in regard to larger quadrupeds, as experienced in districts where it abounds (in that part of Carnarvonshire called Lleyn), "cattle which have been reduced in condition, from whatever cause, have recovered in a manner almost miraculous, by grazing on grounds chiefly productive of this vegetable." Welsh Bot. An effect which may probably be attributed to the saline particles with which the plant is impregnated, as experienced in other instances.

234 TETRANDRIA. MONOGYNIA. SANGUISORBA.

This plant varies very much both in the size and clefts of the leaves, in the height of the stalk, and the length of the spike; but the membrane terminating the anthers is constant.

STAR OF THE EARTH. BUCK'S-HORN PLANTAIN. (Welsh: *Llyridd Corn y Carw*; *Llys Efa*. E.) Gravelly soil. Sea shore, frequent.

A. June—Aug.

Var. 2. Leaves more deeply divided, and more hirsute. Heads short, and lax. Blackst. p. 77.

Between Dartford and Greenhithe. Near the Bristol Channel. Mr. Swayne. —Dawlish, Devonshire.

Var. 3. Leaves strap-shaped, very entire, hairy. Spike roundish. Huds.

Very much resembles *Lob. Ic.* 439. Ray; which is *P. subulata*. Linn.

Dry meadows on the sea-coast. Hudson. Banks of the river near Yarmouth; and near Sheerness. Ray.

Var. 4. Leaves between serrated and toothed. St.

Pet. 4. 9—*Pluk.* 103. 5.

Found on the north coast of Cornwall, by Mr. Watt.

In its smaller state, and with spikes of flowers scarcely longer than broad (var. 1), it has been very generally supposed to be *P. Læflingii*, but that plant, according to Læfling's account, has smooth floral-leaves, whereas in ours they are always hairy, especially on the keel. The root-leaves, he says, are never wing-cleft, but in those of ours, whose spike most resembles the other, they are almost always so.

CENTUNCULUS. *Cal.* four-cleft: *Bloss.* four-cleft, tubular, expanding: *Stam.* short: *Caps.* one-celled, bursting all round.

C. MINIMUS.

Dicks. H. S.—(*E. Bot.* 531. E.)—*Curt.*—*Fl. Dan.* 177—*Vaill.* 4. 2—*Mich.* 18. 2.

Blossom minute, white (or reddish; solitary, sessile, axillary. E.) Continuing and adhering like a veil to the point of the capsule, rarely expanding but when the sun shines strongly upon it. *Plant* very diminutive, often branched, dichotomous. *Leaves* sometimes opposite towards the bottom; otherwise alternate; egg-shaped, pointed, smooth, fleshy. *Plant* hardly an inch high. (*Seeds* numerous. E.)

BASTARD PIMPERNEL. SMALL CHAFF-WEED. (Welsh: *Bril-llys coraidd*. E.) Moist sandy ground, and on commons. Salt-marshes and meadows near the sea side. Newton Cartmel, common. Mr. Hall. Gamlingay bogs. Rev. R. Relhan. (Blithfield, Staffordshire. Hon. Mr. Bagot. Links of St. Andrew's. Mr. Brown. Or Hounslow Heath. Sir W. Watson. Ashford Common. Curtis. Iver Heath, in abundance. Rev. Dr. Goodenough. Side of Llyn Coron, and near Bangor Ferry. Welsh Bot. Marsh near Langside, and Kenmuir Bog, Scotland. Hooker. Rosses and Fanet, Donegal. E. Murphy, Esq. E.) A. June—July.

SANGUISORBA.* *Bloss.* four-cleft: *Germen* betwixt the calyx and the blossom: (*Stam.* dilated upward. E.)

* (The more usual etymology appears to be from *sanguis*, blood, and *sorbeo*, to absorb; the plant being supposed to stop hemorrhages; but with at least as obvious reason from *sanguis* and *orbis*, referring to its globose head of purple flowers. E.)

S. OFFICINALIS. Spikes egg-shaped.

Kniph. 4—*Ludw.* 94—*Fl. Dan.* 97—(*E. Bot.* 1312. E.)—*Fuchs.* 788—*J. B.* iii. 120—*Ger.* 889. 2—*Pet.* 4. 11—*Clus.* ii. 197. 3—*Dod.* 105. 2—*Lob. Obs.* 412. 4—*Ger. Em.* 1045. 2—*Park.* 582. 3—*Matth.* 1033—*H. Ox.* viii. 18. 7.

A hard woody plant, from one and a half to two feet and a half high. *Leaves* winged; wings egg-oblong, serrated, about four pair, and a single one terminal. *Blossom* beneath; segments mulberry-coloured, tube white, fleshy, inclosing the germen; a glandular ring closely embracing, but not adhering to, the style. *Petals* when old, so slightly adhering at the base, that it might almost be considered a four-petalled blossom. *Upper florets* either without stamens, or with only an imperfect one. (*Spikes* about an inch long, dull purple, dense, on long flower-stalks. *Bractees* green, fringed, four under each flower; (the *calyx* of Linnæus:) *Stigma* quadrifid. *Seed* solitary, Sm.; rarely two. Hook. E.)

(A plant which Mr. G. Don found in the west of Scotland, and supposed to be a new variety of this species, is described as "taller and larger, with a longer and truly cylindrical spike," and considered by Smith to be *S. media* of Linn. E.)

WILD BURNET. BLOODWORT. MEADOW BURNET. Moist pastures, especially on marly or calcareous soil. Limestone pastures in the north, very common. Have not found it further to the south-east than Ripton, Huntingdonshire. Mr. Woodward. (Meadows at Bromham, Fenlake, &c. Bedfordshire. Abbot. E.) Marly soils about Stafford, not uncommon. (Near Dunsfries. Lightfoot. E.) P. June—Aug.*

EPIME'DIUM. *Nectaries* four, each reclining on its respective petal: *Cal.* deciduous: *Seed-vessel* a pod, of one cell, many seeds. E.)

E. ALPINUM. (Radical-leaves none: stem-leaf twice ternate. Sm. E.) (*E. Bot.* 438. E.)—*Kniph.* 10—*Mill. Ic.* 133—*Dod.* 599—*Lob. Obs.* 176. 1—*Ger. Em.* 480—*Park.* 1366, upper fig.—*J. B.* ii. 391.

(*Roots* creeping, by which the plant increases rapidly. E.) Near a foot high. *Leaves* heart-shaped, on leaf-stalks. *Blossom* mulberry red, with a yellow stripe, (mutant; *nectaries* membranous, inflated. *Stem* bearing a compound, tri-ternate leaf; leaflets heart-shaped, one to two inches long, fringed at the margin, extremely delicate, hairy beneath, serrate. *Antlers* with two lid-like valves, which, opening elastically, permit the pollen to escape. E.)

(ALPINE BARREN-WORT. In mountain thickets; so rare that its pretensions to be considered indigenous may be questionable. E.) In Bingley Woods, six miles from W. Brierley, Yorkshire, not sparingly. Richardson, in Blackst. 19. (Mr. Hailstone, in Whitaker's Craven, observes that it is not now to be found in Bingley Woods. E.) Mr. Robson has sent me a specimen gathered on Skiddaw in July 1795. (I have also specimens from the Rev. T. Gisborne, discovered in 1787 in a very wild part of Cumberland called Carrock Fell—On Saddleback, near Threlkeld. Mr. Rudge, in Bot. Guide. Hunters' Tryste, near Edinburgh. Dr. Hastings.

* (Cattle will eat this plant when young; it has not yet been cultivated. Salisbury. The root is said to be astringent, and has been recommended as a tonic, though of very moderate efficacy. E.)

About the ruins of Mugdoch Castle, near Glasgow. Mr. Hopkirk. Hook. Scot. E.)

CORNUS.* *Involucrum* generally four-leaved: *Petals* four, superior: *Drupa* succulent; beneath: a two-celled, hard, nut.

C. SANGUINEA. Branches straight, leaves egg-shaped, green on both sides; tuft flat, (without an involucre. E.)

E. Bot. 249—*Fl. Dan.* 481—*Matth.* 260—*Lob. Obs.* 592. 1—*Park.* 1521. 3—*Ger.* 1283—*Dod.* 782. 2—*Ger. Em.* 1467—*Trag.* 1004.

(A few feet in height, with branches of dark red when full grown. *Petals* revolute at the sides, inserted with the *stamens*, into a glandular ring, crowning the germen. Sm. E.) *Tuft of flowers* divided into five parts, and these again sub-divided. Scop. *Leaves* egg-spear-shaped, with strong nerves, stalked, two or three inches long. *Blossom* greenish white. *Berries* purple. *Leaves* blood red in autumn, whence the trivial name. E.)

DOGWOOD HOUND'S-BERRY, (as denoting fruit of an inferior quality. E.) **PRICK-WOOD**, (from its use in making skewers. E.) **GATTEN-TREE**. **BLOODY-TWIG**. **WILD CORNELL TREE**. *Virga sanguinea* of ancient authors; the French and Italian names equally referring to its sanguineous hue. (Welsh: *Cyrgros*; *Cyrrwialen*. E.) Copses and hedges, not uncommon: (especially in calcareous soil. E.) S. June.†

C. SUECICA. Herbaceous; branches in pairs; umbel axillary, pedunculate, with a four-leaved, large, involucre. E.)

(Hook. *Fl. Lond.* 194—*E. Bot.* 310. E.)—*Fl. Dan.* 5—*Penn. Scotl.* ii. 39. at p. 314—*Dill. Elth.* 91—*Fl. Lupp.* 5. 3—*Clus.* i. 60. 1—*Ger. Em.* 1296. 5—*Park.* 1461. 4—*J. B.* ii. 109. 1—*Ger.* 1113.

Stem quadrangular, (four to six inches high. E.) rarely branched; forked at top. *Leaves* (about five-nerved. E.) oval, lower ones more circular; entire, opposite. *General involucre* inclosing many flowers; *little leaves* white. *Flowers* (dark purple. E.) very small, in an undivided umbel. *Fruit-stalk* solitary, terminal, rising from the fork of the stem. The four leaves of the involucre so much resemble petals, that it might be imagined a compound flower. Roth. *Berries* red, (sweetish. Nut nearly globular, pointed. E.)

* (From *cornu*, horn; as applicable to the hard compact texture of the wood. E.)

† The berries are bitter and styptic; they dye purple. Horses, sheep, and goats eat it. Swine and cows refuse it. (M. Margueron, of the Military Hospital at Strasburgh, extracts a kind of oil from the berries of Dogwood. The berries are laid in a heap to soften and heat; after which process by pressure a fat viscus oil may be procured of a clear green colour, without smell or taste, and well adapted for either salads, or lamps. Month. Mag. v. 12, p. 54. Our English Evelyn reports the same, and Matthioli further that the said oil is used for lamps in the country around Trent. A kind with richly variegated leaves is admitted as an ornamental plant in shrubberies. The celebrated

——— "*Cornel spicar*

Ulysses wav'd, to rouse the savage war,"

was probably supplied by a larger species; as also the missiles described in the *Æneid*—

——— "*Bona bello*

Cornus."

"*Cornel*, good in war." Virg. *Georg.* ii. E.)

DWARF CORNEL. *C. herbacea*. Huds. Moist alpine pastures in the north. (Said to have been first discovered by Dr. Penny, (who flourished nearly three centuries ago), on the Cheviot Hills.—Hole of Horcum, near Saltergate, Yorkshire. Mr. Travis. On Ben Lawers. Mr. Winch. E.) Pentland Hills, near Edinburgh. Dr. Hope: but not found there latterly. Among the Highland mountains not unfrequent. Plentiful at the foot of the precipice on the north side of Ben Nevis. Mr. Murray. About Inverness. Mr. G. Anderson. Hook. Scot. E.) P. June—July.*

PARIETARIA.† Fertile florets mixed with perfect ones on the same branch: *Calyx* quadrifid: *Bloss.* none: *Seed* one, superior, invested with the elongated calyx.

P. OFFICINALIS. Leaves spear-egg-shaped; fruit-stalks forked; calyx two-leaved: (stem ascending. E.)

(*E. Bot.* 879. E.)—*Ludw.* 115—*Walc.*—*Ger.* 261—*Fl. Dan.* 521—*Curt.* 233—*Woodv.* 142—*Pet.* 8. 1—*Fuchs.* 277—*J. B.* ii. 976. 2—*Gars.* 441—*Lonic.* i. 137. 1—*Cam. Epit.* 849—*H. Or.* v. 30. row 3. 1—*Matth.* 1113—*Dod.* 102—*Job. Ghs.* 139; *Id.* i. 258. 1—*Ger. Em.* 331—*Park.* 437—*Blackw.* 156—*Trag.* 193.

(*Involucrum* seven-cloven, three-flowered, the lateral ones perfect and fertile. E.) A plant impatient of cold. *Stems* reddish, (annual, branched, quadrangular, hairy. *Blossoms* greenish white, numerous, axillary, small. *Fruit* ovate, black, shining. *Filaments* curiously jointed. *Anthers* if touched when ripe with the point of a needle, burst, and eject their pollen. The filaments, for a while restrained by the calyx, relieve themselves with an elastic spring, by which the pollen is dashed with great force upon the stigma. Sm. E.)

PELLITORY OF THE WALL. (Irish: *Mintus Caissil.* Welsh: *Canhauwl; Cantafawd; Pelydr y gwelydd.* E.) On old walls and amongst rubbish. P. May—Sept.‡

URTICA.§ Flowers barren and fertile apart: *Calyx* four-leaved: *Bloss.* none.

B. *Nectary* in the centre; cyathiform.

F. *Cal.* two, opposite leaflets very small: *Summit* hairy: *Seed* one, egg-shaped, shining.

(¶) *Barren and fertile flowers on distinct plants.*

U. DIOICA. Leaves opposite, heart-shaped; bunches of flowers mostly in pairs, much branched.

* (The berries of this pretty little plant are eaten by the Highlanders to improve appetite, and hence called *Lus-a-chraois*, or Plant of Gluttony. Lightf. In the Arctic regions bears fatten on these berries, whence they are called by the Grees *Musqua muna*. Franklin. E.)

† (From *paries*, a wall; the usual place of its growth. E.)

‡ This plant was formerly in repute as a medicine; but it does not seem to possess any remarkable qualities. It is asserted, that the leaves strewed in granaries destroy the Corn Weevil. It contains, I have been informed, a considerable quantity of nitre, and that in making an extract from it, the mass has taken fire. The *Nitvaria* also contains the same salt, and is said not to flourish unless nitre be mixed with the soil in which it grows. Dr. Stokes.

§ (So called, according to Pliny, *ab urendo*; from its stinging quality. E.)

Woods. 146—*Fl. Dan.* 746—*Blackw.* 12—(*E. Bot.* 1750. E.)—*Fuchs* 107—*J. B.* iii. 445. 2—*Trag.* 2. 1—*Ger.* 570. 2 and 4—*Gars.* 637—*Lonic.* i. 108. 2—*Matth.* 1126—*Dod.* 151. 2—*Lob. Obs.* 281. 1; *Ic.* i. 521. 2—*Ger. Em.* 706. 2—*Park.* 441. 3—*H. Oz.* xi. 25. row 2. 1—*Pet.* 1. 9.

(Three feet or more in height, the whole plant pubescent, and clothed with stinging bristles. Flowers generally dioicous, sometimes monoicous. E.)

COMMON NETTLE. (Irish: *Caol fail.* Welsh: *Danadlen fwyaf.* Gaelic: *Feanntagg; Deantagg.* E.) Ditch banks, and amongst rubbish.

P. July.*

* The stings are very curious microscopic objects: They consist of an exceedingly fine pointed, tapering, hollow substance, with a perforation at the point, and a bag at the base. (Mr. Thompson considers these stings as the excretory ducts of papillary glands. E.) When the sting is pressed it readily punctures the skin, and the same pressure forces up an acrimonious fluid from the bag, which instantly rises into the wound, and produces an effect that most persons have experienced. The stalks may be dressed like flax or hemp, for making ropes, cloth, or paper, (the fibre somewhat resembling that obtained from the American Aloe, which is converted to like purposes. E.) The plant formerly was used as an astringent, but is now disregarded. A leaf put upon the tongue, and pressed against the roof of the mouth, is efficacious in stopping a bleeding at the nose. Paralytic limbs have been recovered by stinging them with Nettles. The young shoots are gathered early in the spring to boil with broth or gruel, (and thus afford a salutary pottage. From the seeds a useful lamp-oil may be expressed. E.) Cows eat the leaves readily in hay, or when they are a little withered. The leaves chopped are mixed with the food of young turkeys, and other poultry. Cows, horses, sheep, goats, and swine refuse it. Asses are fond of it. (In the north of England Nettles are boiled as food for pigs. They are so much valued in Holland as to be occasionally cultivated, and mown five or six times a year for green food. Woollen stuffs may be dyed a beautiful and permanent green with the juice of Nettles only, as practised by M. Kalugin, of Moscow. The roots have been considered diuretic; boiled with alum they will dye yarn a yellow colour. Eggs are thus stained yellow preparatory to the feast of Easter by the religious of the Greek church. Loudon says that few plants force better or more rapidly, and that the tender shoots so produced make a delicate and high-flavoured pot-herb. Though

“Where rampant Nettles lift the spiry head,”

is generally found to be rich land, these intruders should be eradicated from the finer pastures in moist weather by an instrument invented for the purpose, mowing being an idle, ineffectual method, annual, and endless. An extraordinary application of Nettles is recorded by Goldsmith, who states that “Capon may very easily be taught to clutch a fresh brood of chickens throughout the year. The manner of teaching them is this. The capon being made very tame, about evening pluck the feathers off his breast, and rub the bare skin with the nettles: then put the chickens under him, which presently run under his breast, and rubbing the bare skin gently with their heads, allay the stinging smart which the Nettles had produced. This is repeated a few nights till the capon takes an affection to the chickens that have thus given him relief, and continues to afford them the protection they seek. From that time the capon brings up the chickens like a hen, performing all the functions of the tenderest parent!” *Hist.* iii. 123. A decoction of the young plant bottled, with the addition of salt, will coagulate milk. *Month Mag.* v. 28. p. 463. In the county of Salop Nettles are dressed and manufactured like flax into cloth; this is likewise the case in France, where likewise they are made into paper. Indeed it is much to be lamented that our ingenious manufacturers do not more generally avail themselves of a plant which may be obtained in any quantity in every part of Britain; which would prove invaluable in various processes of domestic economy; and the removal of which would at the same time materially benefit the agriculturist. Even this outcast, moreover, may “point a moral to our tale.” Would you touch a Nettle without being injured by it, take hold of it stoutly. Do the same by other annoyances, and hardly any thing will disturb you; grapple with difficulties, and thus overcome them. The Nettle has ever been stigmatized as the emblem of an irritable and waspish temper, as in Waller’s homely distich,

(2) *Barren and fertile flowers on the same plant.*

U. PILULIF'ERA. Leaves opposite, egg-shaped, serrated; fertile catkins in globular heads.

E. Bot. 148—*Mill. Ill.*—*Kniph.* 9—*Trag.* 3. 2—*Pet.* 1. 11—*Blackw.* 321. 1—*Fuchs.* 106—*J. B.* iii. 445. 1—*Matth.* 1125—*Ger.* 570. 1—*Dod.* 151. 1—*Lob. Obs.* 281. 2; *Ic.* i. 522. 1—*Ger. Em.* 707. 1—*Park.* 440. 1—*H. Ox.* xi. 25. 5—*Lonic.* i. 109. 1—*Gars.* 638.

(Plant two feet high, branched, all over rough with very acrid, poisoned bristles. *Stem* bluish. *Calyx* of the barren flower expanding, four-leaved; of the fertile one two-leaved, concave, closed, rough on the outside. *Summit* pubescent, sessile. *Seed* solitary, naked, brown, shining. *Fl. Brit. E.*)*When growing very close to a wall it is frequently taller and more slender, and the leaves generally smaller and egg-shaped; when more distant the plant is shorter and stronger, and the leaves larger and heart-shaped. *Woodw.*

ROMAN NETTLE. (Welsh: *Danadlen helaidd.* E.) On rubbish. (Formerly in the streets of Romney, but now extirpated: though still to be found a little south of Lyd church-yard; and abundant under old walls at Gorleston, Suffolk. *Mr. Dillwyn.* About Lowestoft and Bungay. *Fl. Brit.* In a shady ditch at Velinvrán, Cornwall. *Borlase.* Ballast Hills, Sunderland. *Mr. Winch.* On the north side of Harwich church, near the steeple, and in a meadow on the west side of the gate, plentifully. *Dale.* In several parts of Canvey Islands, Essex. *Blackstone.* Ditto. *Baron-hill, Anglesey.* *Rev. H. Davies. E.*) Under walls at Yarmouth and elsewhere on the coast of Norfolk and Suffolk, frequent. *Mr. Woodward.*

A. June—Aug.

U. U'ENS. Leaves opposite, oval; (clusters of flowers nearly simple. E.)

Fl. Dan. 739—(*E. Bot.* 1236. E.)—*Ger.* 570. 8—*Matth.* 112—*Dod.* 152—*Lob. Obs.* 282. 1; *Ic.* i. 522. 2—*Ger. Em.* 707—*Park.* 440. 2—*Pet.* 1. 10—*Gars.* 637. 1—*Fuchs.* 108—*J. B.* iii. 446—*H. Ox.* xi. 25. row 2. 4—*Trag.* 3. 1.

(Plant pale green, about a foot high, covered with stinging bristles. *Sheath-scales* small, reflexed. *Leaves* three to five-ribbed. E.)

Some so like thorns and Nettles live,
That none can for them, when they perish, grieve."

but in truth with little justice to this vegetable outcast, for when does it prove the aggressor, or engage in active warfare against its neighbour? To how many little creatures does it afford friendly protection and subsistence; for Entomologists assure us that not less than thirty species of insects are nurtured upon the Nettle alone: as *Haltica oleracea*, *semineæ*, and *testacea*, *Chrysomela Banksii*, *Vanessa Atalanta*, *V. Io*, *V. urticæ*, *V. alburn*, *Liparus asper*, *L. elevatus*, *Chrysomela polita*, *Apion frumentarium*, *A. Curculio Maii*, *Rhyssalus Austriacus*, *Cassida splendidula*, *Aphis urticata*, *Tortrix urticana*, and the splendid *Nymphalis gemmatus*, a butterfly, distinguished by its four peacock's eyes on each wing; its caterpillar black dotted with white. *Tremella Urticæ* fills the furrows of the stalks of dead Nettles during the winter months, with orange coloured streaks; and *Æcidium Urticæ*, with capsules cylindrical, light reddish brown; seeds pale yellow; grows on the under side of the leaves, in spring and autumn. *Clavaria compressa* also may be found on the decayed stems, in groups of threes, of an olive colour, changing to black: stem short, thick. E.)

LESSER NETTLE. (Welsh: *Danadlen leiaf*. E.) On rubbish, cultivated ground, and road sides, common. A. July—Sept.*

VISCUM.† Barren and fertile flowers on different plants.

B. *Calyx* none: *Bloss.* with four divisions or petals: *Filam.* none: *Anthers* sessile on the petals.

F. *Calyx* a little bordered: *Petals* four, superior: *Style* none: *Berry* pulpy, one-celled, one-seeded: *Seed* heart-shaped.

V. ALBUM. Leaves spear-shaped, blunt: stem dichotomous; heads of flowers axillary.

(E. Bot. 1470. E.)—*Mill. Ill.*—*Sheldr.* 20—*Woodv.* 270—*Blackw.* 184—*Kniph.* 1—*Fuchs.* 329—*Lon.* i. 55. 2—*Matt.* 806—*Cam. Epit.* 555—*Trag.* 949—*Dod.* 826—*Lob. Obs.* 361. 1; *Ic.* i. 636. 2—*Ger. Em.* 1350. 1—*Park.* 1393. 1—*Gars.* 628—*Ger.* 1168. 1.

(Stem very much branched, forked, and jointed; cylindrical, smooth, pale greenish colour. Leaves the colour of the stem, opposite, tongue-shaped, very entire, smooth, coriaceous. Spikes sessile, few-flowered. Flowers yellowish green, inserted in a common fleshy receptacle. Berries the size of a pea, globular, pearly-white, filled with slimy, sweetish, juice. Fl. Brit. E.) A singular parasitical evergreen. The barren plant opposite to the fertile one. Linn. The root insinuates its fibres into the woody substance of the tree on which it grows.

WHITE MISLETOE. MISSEL. (Welsh: *Uchelaug*; *Pren awyr*. E.) Most frequently on Apple trees; also on the Pear, Hawthorn, Service, Oak, Hazle, Maple, Ash, Lime, Willow, Elm, (White Beam, Quicken-Crab, and White Thorn. E.) Rarely on the Oak. Hunt. Evel. Very rare in the northern counties, growing only at Lithe, near Kendal. Mr. Gough. Woods at Meikleour. Mr. Murray. Hook. Scot. (On trees near Bedlington, Northumberland, the only station in the district. Mr. Winch. E.) In Worcestershire, Herefordshire, (and the more southern counties, very common both in orchards and hedge-row fruit trees. E.) S. May.‡

* The leaves are gathered, cut to pieces, and used as a stimulant in the food of young turkeys. Cows, horses, sheep, goats, and swine refuse it. Linn.

† (*Eol. siccus*, tenacious; from the adhesive property of the berries, or plant. E.)

‡ Birdlime may be made from the berries and from the bark. The mistletoe bird (hence denominated *viscivorus*. E.) the fieldfare, and the thrush, eat the berries, the seeds of which pass through them unchanged, and adhere to the branches of trees, where they vegetate. (And thus the vegetative power of some seeds is supposed to be nourished, first having undergone a kind of maceration in the stomach and intestines of birds;—of those very animals which thus become peculiarly accessory to the increase of their own essential supplies. E.) Some authors observing that the roots are always inserted on the under side of the branches, deny this method of propagation; but the rains will soon wash them into that situation. No art hath yet made these plants take root in the earth. Sheep eat it very greedily, and it is frequently cut off the trees for them in severe seasons. It is said to preserve them from the rot. Mr. Hollefer. (Cows are reported to have been seriously disordered by feeding on it, in a half dead state. E.) If the berries, when fully ripe, be rubbed on the smooth bark of almost any tree, (more certain if inserted beneath the bark. E.) they will adhere closely, and produce plants the following winter. In the garden of Mr. Collins, of Knaresborough, are many large plants of it produced in this manner on dwarf apple trees. Hunt. Evel. (A vegetable substance resembling caoutchouc, or elastic gum, may be extracted from several plants besides those most noted for its production in the Brazils; and amongst others, from the Mistletoe, by a process detailed in the

HIPPOPHAE.* Barren and fertile flowers on different plants: *Bloss.* none.

B. *Calyx* one leaf, two-lobed.

F. *Calyx* one leaf, two-cleft, tubular: *Berry* superior, one-celled: *Seed* hard, shining, (invested with a double coat. E.)

H. RHAMNOIDES. Leaves spear-shaped.

Fl. Ross. i. 68—(*E. Bot.* 425. E.)—*Cam. Epit.* 81—*J. B. i. h.* 33—*Dod.*

Journal of Hermstadt. It was formerly in great repute as a remedy for epileptic and other complaints; but it is now disregarded; and indeed its sensible qualities promise but little. Paley adduces this parasite, (which like many others may be said to have no earthly inheritance,) as a singular instance of what he terms *compensation*, in his argument proving the design and contrivance of nature. "No art hath yet made these plants take root in the earth. Here, therefore, might seem to be a mortal defect in their constitution. Let us examine how this defect is made up to them. The seeds are endued with an adhesive quality, so tenacious, that if they be rubbed upon the smooth bark of almost any tree, they will stick to it. And then what follows? Roots springing from these seeds, insinuate their fibres into the woody substance of the tree; and the event is that a misseletoe-plant is produced next winter. Of no other plant do the roots refuse to shoot in the ground; of no other plant do the seeds possess this adhesive generative quality, when applied to the bark of trees." *Nat. Theol.* Of the Druidical and superstitious uses of this plant, some curious particulars may be found in Pliny's *Nat. Hist.*; whence we learn that it was ordained to be cut with a golden knife, and only by the priest, clothed in white, and the plant received on a white napkin, when the moon was six days old; the ceremonial being accompanied by the sacrifice of two bulls,—

"Ad *Fiscum* Druidæ cantare solebant." Ovid.

Having no immediate connection with the earth, the thus consecrated Mistletoe was deemed of celestial origin, and when discovered on the Oak; (after whose British name the priests were called,) two principal objects of superstition united their influence in convincing the ignorant heathens that the sacred plant would prove an effectual antidote to poisons, and a preventive of all the various ills of Pandora's box.

"The naturalists are puzzled to explain
How trees did first this stranger entertain;
Whether the busy birds engraft it there,
Or, else, some Deity's mysterious care,
As Druids thought:"—

or rather taught.

In the Christmas ceremony of the bush may be yet recognised a slight vestige of the importance once attached to this peculiar shrub. And thus runs Sir W. Scott's animated description of the good old time ere our bold peasantry were reduced to the condition of paupers, and their joys curtailed by a spurious sanctity.—

• "England was merry England when
Old Christmas brought his sports again.
"Twas Christmas broach'd the mightiest ale;
"Twas Christmas told the merriest tale.
A Christmas gambol oft would cheer
A poor man's heart through half the year.
The hall was dress'd with holly-green;
Forth to the wood did merry men go,
To gather in the Mistletoe."

M. De Candolle, to prove that the Mistletoe draws its nourishment from the plant on which

* (From *ἵππος*, a horse, and *φως*, to give light; formerly being reputed to cure blindness in horses.)

242 TETRANDRIA. MONOGYNIA. ISNARDIA.

755. 1—*Fl. Dan.* 265—*Gies.* 38—*Matth.* 156—*Lon.* ii. 8. 2—*Clus.* i. 110. 1—*Lob. Obs.* 598. 3 : *Ic.* ii. 180. 1—*Ger. Em.* 1334. 2—*Park.* 1006. 1.

Shrub eight feet high. *Branches* widely spreading, straight, stiff, thorny at the ends ; the *lesser* numerous, scattered, short, expanding. *St. Leaves* strap-spear-shaped, very entire, green above, and whitish scales, white underneath, with a strong prominent mid-rib, which has a corresponding furrow on the upper surface, edges usually somewhat reflexed. *Woodw.* *Flowers* solitary, appearing before the leaves. *Barren flowers* below the leaves, between a branch and a bud ; *fertile flowers* sessile in the bosom of the lowermost leaves.

SEA BUCKTHORN. COMMON SALLOW THORN. Sea-shore, in sand. Lindley coast, Lincolnshire ; Sandwich, Deal, Folkstone. Isle of Sheppey. Cley and Sherringham Cliffs, Norfolk. Mr. Crowe. Between Yarmouth and Winterton. Mr. Woodward. (Cliff between Whitby and Lyth. Mr. Travis. E.) S. March—May.*

(ISNARDIA. *Cal.* four-cleft, superior : *Caps.* quadrangular, of four cells, crowned by the calyx.

I. PALUSTRIS.

Lind. Alsat. 115. t. 2. b.—*Bocc. Mus. t.* 84. f. 2.

Herb floating, smooth, with numerous long, filamentous roots. *Stems* several, about a span long, simple, or slightly branched, leafy, bluntly quadrangular. *Leaves* opposite, stalked, ovate, acute, undivided, entire, scarcely an inch in length, bright green, somewhat succulent, the mid-rib often red or purplish. *Bractes* two, acute, small. *Fl.* axillary, solitary, sessile, small, green and inconspicuous. Segments of the *calyx* triangular.

it grows, dipped in water, coloured red by cochineal, a branch of an apple-tree bearing Mistletoe. The coloured water penetrated the wood and inner bark of the apple-tree, and passed into the Mistletoe, where its colour was even more intense than in the former. It also appears by another ingenious experiment that the leaves of this plant perform the same function to the apple-tree as the true leaves of the tree do. The above eminent naturalist, never having observed the Mistletoe growing on the Oak, is inclined to believe that the *Loranthus* must have been the real *Viscum Quercus*, and so it is commonly esteemed in Italy ; but we have no reason to suppose that the *Loranthus* was ever indigenous to Britain. Such a deduction would be contrary to the concurrent testimony of ages.

In Virgil, *Æn.* 6., we readily recognize our sacred Epidendron :—

“ Quale solet sylvis brumali frigore *Viscum*

Fronde vivere nova, quod non sua seminat arbos,

Et croceo festu teretes circumdare truncos.”

It is, however, a remarkable fact, even noticed by Pliny, that the Mistletoe is very rarely found on the Oak. As a circumstance of uncommon occurrence, even in an age abounding with observers of nature, Mr. Dickson, in 1817, presented to the Linnean Society a specimen of Mistletoe found by him growing upon an oak-tree, about four miles from Maidstone, by the side of the Medway. Whether the infrequency of such an union, or the power of the Druids to produce the phenomenon by artificial means when and where it best suited their occult purposes, added to its supposed virtue, it may not be possible to determine ; but that the favourite Mona of the Druids, (Anglesey,) should not latterly produce a single plant of the venerated Mistletoe, (as we learn from the Rev. Hugh Davies,) would scarcely be expected. E.)

* Cows refuse it ; goats, sheep, and horses eat it. The berries are very acid, with an austere vinous flavour, and the fishermen of the Gulf of Bothnia prepare a rob from them, which, added to fresh fish, imparts a very grateful flavour. In sunny sandy situations it is planted for hedges. Linn. (This shrub is often cultivated in gardens for the beauty of its foliage, but rarely perfects its berries in such situations ; gardeners being inattentive to plant both sorts together. It is valuable as affording partial shelter in exposed situations near the sea. E.)

MARSH ISNARDIA. In ponds and watery places. Found in a pool at Buxted, Sussex, in 1827, by Mr. W. Borrer.

A. July. Sm. Eng. Fl. E.)

ALCHEMILLA.* *Calyx* eight-cleft: *Bloss.* none: *Seed* one or two, inclosed by the calyx.

A. *VULGARIS*. Leaves (plaited, lobed.

Hook. Fl. Lond. 210—E. Bot. 597—Abbot Fl. Bed. p. 36.—Purt. 1. E.)—Ludw. 176—Fl. Dan. 693—Blackw. 72—Matth. 1177—Trag. 512—Fuchs. 612—J. B. ii. 398 (i)—Dod. 140. 2—Ger. Em. 949—Pet. 9. 9—Kniph. 3—Chus. ii. 208. 2—Lob. Obs. 378. 3—Park. 538—H. Ox. ii. 20. row 3. 1—Pet. 9. 10—Ger. 802—Mill. 18. 2.

(Root fibrous, woody. Stems six to twelve inches high, rather procumbent, hairy, leafy. E.) Flowers forming a kind of umbel, the General involucre being a leaf which entirely surrounds the stalk, but the Partial involucre extending only half way round. Leaves cloven generally into seven lobes, serrated. Leaf stalk sending a rib along the middle of each lobe of the leaf. Seed one, sometimes two, in each seed-vessel. Flowers yellowish green.

Var. 2. *Minor*. Much smaller: leaves pubescent. Huds. (A more silky and elegant plant: clusters of flowers more compact. E.)

Pluk. 240. 2—Barr. 728—Mill. 18. 1.

A. alpina hybrida a. Linn. Sp. Pl. who supposes it to be the product of the seed of *A. alpina* impregnated by the pollen of *A. vulgaris*, (*A. vulgaris* β. Sm. E.)

On mountains.

P. July.

COMMON LADY'S MANTLE.† (Irish: *Crub lehoín*. Welsh: *Mantell Fair gyffredin*; *Simmur y cor*. Gaelic: *Copan-an-dru ic*; *Cota-preasach-ion-an Ri*. E. Meadows and pastures, frequent. P. June—Sept.‡

A. *ALPINA*. Leaves with finger-like divisions, serrated (silky at the back. E.)

Fl. Dan. 49—E. Bot. 244—Kniph. 5—Munt. 90—Lob. Adv. 307. 1—Pet. 9. 11—Barr. 756—Park. 394. 3—J. B. ii. 398. (f) 1—Chus. ii. 108. 1—Ger. Em. 988. 5—Ger. 837. 5—H. Ox. ii. 20. row 2. 3.

* (Because celebrated by the alchymists for its virtues. E.)

† (In the singular; being so named especially of the Virgin Mary, "Our Lady," whose paraphernalia was rendered complete by the misapplied ingenuity of cloistered devotees, as diffused through the ancient herbals. E.)

‡ The whole plant is astringent. In the province of Smolandia, in Gothland, a tincture is made from the leaves, and given in spasmodic or convulsive diseases. Horses, sheep, and goats eat it. Swine refuse it. Cows are not fond of it. (The Rev. S. Dickenson gives the following curious account of its pernicious effects on cows: "Being lately on a visit at Somerford, the Hon. E. Moncton requested me to examine the herbage of a meadow near the river Pentk, in which he had the misfortune, a few years ago, to have five milking cows die suddenly at once, and several more were with difficulty recovered. The symptoms of the disease, which he attributed to some noxious plant, were irremediable obstruction in the bowels. Upon examination, I found a very unusual abundance of *Alchemilla vulgaris* in every part of the field; and am inclined to believe this plant the cause of the fatality, as it is known to be of a very astringent quality. It was the aftermath the herd depastured; and the survivors, upon being introduced into the same field the summer following, were immediately affected with similar symptoms, but removed in time to prevent the fatal consequences; since which Mr. Moncton has never hazarded the depasturing of it by neat cattle." E.)

Leaves of a shining white underneath; divided into seven little leaves, and serrated only at the ends. Linn. *Little leaves* sometimes five, *those of the stem leaves* three. Woodw. *Flowers* greenish, (much resembling those of the preceding species; but the smaller size and elegant silvery pubescence of this plant, with its digitate leaves, are strikingly different. E.)

(ALPINE LADY'S MANTLE. E.) CINQUEFOIL LADY'S MANTLE. (Irish: *Kna Leana*. E.) Mountains in the North (frequent, especially in micaceous soil. E.) Ullswater, near Penrith. Ray. Rocks in Borrowdale, near Keswick. Mr. Woodward. Near Buckbarrow Well, in Long-sleadale, Westmoreland. Mr. Jackson. (Glen Crow, Ben Lomond, Ben Lawers, and other highland situations. Mr. Winch. Near the source of the river Spey. Dr. Bostock. E.)

(A. ARVEN'SIS. Leaves flat, three-lobed; lobes deeply cut.

E. Bot. 1011. E.)—*Fl. Dan.* 973—*Col. Ecphr.* 146—*Pet.* 9. 12—*H. Or.* ii. 20. row 3. 4—*Lob. Adv.* 324—*Ger. Em.* 1594—*J. B.* iii. p. 2. 74. 3—*Park.* 449.

(*Calyx* pitcher-shaped, angular. *Seeds* sometimes two. *Fl. Brit.* *Stems* branched, trailing, leafy, four or five inches high. *Leaves* hairy, alternate, not plaited; *stipulae* large, deeply incised. Like *A. vulgaris* this species has occasionally two *pistils*. E.) *Calyx* eight-cleft; the *alternate segments* exceedingly small, but always present. Leers. *Flowers* axillary; small, greenish white, hairy tufts.

FIELD LADY'S MANTLE. PARSLEY-PIERT. (Irish: *Minan Muire*. *A. arvensis*. Sm. Hook. Grev. *Aphanes arvensis* With. Ed. 4. Hull. Linn. Relh. *Percipier Anglorum*. Ger. Em. Ray. E.) Corn-fields, and dry gravelly lands. A. May—Aug.*

DIGYNIA.

BUFFONIA.† *Cal.* four-leaved: *Bloss.* four petals: *Caps.* two-valved, two-seeded.

B. TENUIFOLIA.

(E. Bot. 1313. E.) *Magn. Hort.* 15—*Pluk.* 75. 3.

(*Stem* a span high, cylindrical, upright, jointed. *Branches* alternate. *Leaves* two at each joint of the stem, awl-shaped, three-ribbed. *Flowers* at the base of the leaves, white, small, solitary; on *stalks* rather rough. *Calyx-leaves* three-ribbed, with broad membranous margins. E.)

SLENDER BUFFONIA. Hounslow Heath. Sea coast, near Boston, Lincolnshire. A. May—June.

(Sir J. Banks and Sir J. E. Smith doubt whether this plant be really indigenous, the stations named having been unproductive for some time past. E.)

* (It was formerly eaten raw or pickled; and thought serviceable in cases of gravel and stone. Camden, in his *Britannia*, supposing it a much rarer plant than it really is, either in England or other countries, describes it as "*Percepier*," (q. d. break stone,) growing wild about Keyasham, in Somersetshire. "The barbarous word *Parsley Piert*," we agree with Gerard, must have been "given by some simple man, who had not well learned the true term;" but, with all due deference we submit, that to adopt the worthy father's suggestion, "*Petra Pungens*," would be little better than Romanizing the barbarism. E.)

† (After George le Clerc, a learned Frenchman, Comte de Buffon, born 1707, said to have spent fourteen hours every day in his study; author of a celebrated *Natural History*, died 1788. The specific name is understood to convey a satire on his slender pretensions to Botanical distinction. E.)

(ALNUS. Barren and fertile flowers on the same plant. *Pericarp* naked; not winged as in *Betula*.

A. GLUTINOSA. Fruit-stalks branched, wedge-shaped, very blunt; leaves roundish, glutinous; veins, underneath woolly at the base.

Hook. Fl. Lond. 59—E. Bot. 1508. E.)—Matth. 140—Ger. 1294—Clus. i. 12. 2—Lob. Ic. ii. 191. 1—Ger. Em. 1477. 2—Park. 1409—Gars. 138—Clus. i. 12. 1—Dod. 839. i.—Ger. Em. 1477. 1—Hunt. Evel. p. 240. i. p. 222. Ed. ii.—Trag. 1084.

(Bark rugged, brown. Wood reddish. E.) Leaves nearly circular, clammy, serrated. Barren Catkin cylindrical, deep mulberry colour. Segments of the blossom unequal. Fertile Catkin egg-shaped. Style purplish red.

(Var. 2. Leaves hoary, more acute, and less viscid. Lightf. E.)

ALDER. OWLER. (Scotch: *Eller*. Welsh: *Guernen*. Gaelic: *Amfearna*. E.) *Betula Alnus*. Linn. Huds. Lightf. With. Fl. Brit. E. Bot. *Alnus glutinosa*. Gart. Willd. De Cand. Pers. Ait. Hook. Sm. Not uncommon near water. In remarkable luxuriance in the moist valleys of the Highlands of Scotland. Hooker. T. Feb.—Mar.*

* The Alder flourishes best in low marshy situations, in which it is frequently planted to make hedges. It will not live in a chalky soil. It is easily propagated by seeds, but not by slips or cuttings. Grass grows well beneath its shade. The wood is soft and brittle; endures a long time under water, and therefore is used for pipes and piles, and to lay under the foundations of buildings situated upon bogs. (According to Vitruvius the ancients were well acquainted with the imperishable nature of this timber, when used for piles in swamps or under water; in such situations it becomes black as ebony, and almost hard as iron. The Rialto of Venice is thus founded; nor has its use been neglected in the Netherlands. The branches may be cut for poles every five or six years. E.) Women's shoe-heels, ploughmen's clogs, cogs for mill-wheels, and various articles of the turner, and in the Highlands handsome chairs, are made of it. The bark yields a red colour, and with the addition of copperas, a black. It is also used to dye brown, particularly thread, and for colours to be saddened with copperas. It is principally used by fishermen to stain their nets. (We are glad to learn from Mr. Hall's report, that the country people in Scotland still practise so commendable a degree of thrift as often to make their own shoes; and, following the example of their forefathers, to avoid the tax upon leather, privately tan hides with the bark of Birch and Alder. How far more comfortable and independent would the condition of the English peasant be, were he thus ingeniously and economically to pass his winter evenings, instead of wasting both his hard earnings and his vacant hours at the seductive ale-house, or in acquiring habits of artificial luxury. Various passages in the ancient classics seem to intimate, that the trunks of Alder trees were among the first converted into boats. Martyn ingeniously surmises that one of these trees, hollowed by age, might have fallen into the water, and so given the first idea of navigation. E.) In the Highlands of Scotland near Dundonald, Mr. Pennant says, the boughs cut in the summer, spread over the fields, and left during the winter to rot, are found to answer as a manure. In March the ground is cleared of the undecayed parts, and then ploughed. The fresh gathered leaves are covered with a glutinous liquor, (which concretes into a spurious manna. E.) They are sometimes strewed upon floors to destroy fleas; which are said to be entangled in the tenacious fluid, as birds by birdlime. The catkins dye green. The whole plant is asstringent. It affords food to many kinds of moths and other insects, as *Orchestes Alni*, *Psylla Alni*, *Adimonia Alni*, *Livia Alni*, and *Tenthredo luctuosa Alni*, of which latter Barbut says "this pretty, quiet, melancholy fly, is often fatally entangled in the clammy juice that oozes from the leaves. Its colours are chiefly yellow and brown, body black." Of vegetable parasites *Erineum alneum*, Grev. Scot. Crypt. 157. 2; "convex, dotted, in irregular patches; white, changing to purple and brown," is frequently found on the leaves; also *Xyloma alneum*, "single, roundish, crowded, black;" and *Dothi-*

BETULA.* Barren and Fertile flowers on the same plant :

Cal. one leaf, with three clefts.

B. Cal. three-flowered.

F. Cal. three-flowered : (*Seeds* compressed, solitary, with a membranous border. *E.*)

B. ALBA. Leaves ovato-deltoid, acute ; smooth, doubly serrated.

dea alnea, figured in Grev. Scot. Crypt. 146. 2. *E.*) Horses, cows, goats and sheep browse on Alder. Swine refuse it. (The leaves, when eaten by cows, are reputed to increase their milk. *E.*) If planted in a low meadow, the ground surrounding it will become boggy ; whereas, if Ash be planted, the roots of which penetrate a great way, and run near the surface, the ground will become firm and dry. Mr. Woodward. (In Japan, the cones are used to dye black, and sold ready dried. Kœmpfer. The branches serve to make charcoal, and the knots of the trunk are beautifully veined, and used by cabinet-makers. Theophrastus mentions the uses of the bark for dying skins, as does Pliny the durability of the wood for piles and water-pipes. Mr. Gray asserts the inner bark to be purgative. Some of the largest trees of this description in England are reported by Gilpin to grow at Bishop's-Aukland, Durham.—From their indestructibility in moisture, and natural situation, few trees are more frequently discovered beneath the surface of the earth than the Alder. The wonderful appearances of prostrate forests of different kinds of trees occasionally presented to view, have induced many interesting speculations relative to their history. Connected with this curious subject, the following brief account may be as much to the purpose as any we could select : the level of Hatfield-chase, in Yorkshire, a tract of above eighteen thousand acres, which was yearly overflowed, was reduced to arable and pasture land by one Sir Cornelius Vermusden, a Dutchman. At the bottom of this wide extent, are found millions of the roots and bodies of trees. The roots of all stand in their proper postures ; and by them, as thick as ever they could grow, the respective trunks of each, some above thirty yards long. The Oaks, some of which have been sold for fifteen pounds a piece, are as black as ebony, very lasting, and close-grained. The Ash-trees are as soft as earth, and are commonly cut in pieces by the workmen's spades, and as soon as flung up into the open air, turn to dust. But all the rest, even the Willows themselves, which are softer than the Ash, preserve their substance and texture to this very day. Some of the Firs appear to have vegetated, even after they were fallen, and to have, from their branches, struck up large trees, as great as the parent trunk. It is observable that many of these trees have been burnt, some quite through, some on one side ; some have been found chopped and squared, others riven with great wooden wedges ; all sufficiently manifesting that the country which was deluged, had formerly been inhabited. Near a great root of one tree, were found eight coins of the Roman Emperors ; and in some places the marks of the ridge and furrow were plainly perceptible, which testify that the ground had formerly been patient of cultivation. The learned naturalist, (Phil. Tr. iv. 214), who has given this description, has clearly evinced, that this forest in particular must have been thus levelled by the Romans ; and that the falling of the trees must have contributed to the accumulation of the waters. The Romans, whenever the Britons were discomfited, always pursued them into the fastnesses of low woods and miry forests. In these the wild natives found shelter ; and when opportunity offered, issued out and fell upon their invaders without mercy. In this manner the Romans were at length so harassed, that orders were issued for destroying all the woods and forests in Britain. To effect this object the aid of fire was not withheld. The forest thus fallen, must necessarily have stopped up the currents, and turned into great lakes what were before temporary streams. The earth, as it were, daily augmenting by the accumulation of decaying vegetable matter, by the sediment of the waters, and by the new growth of substances of which it was composed, soon overtopped the waters by which this intumescence was at first effected ; and thus were the inundations, with some slight assistance from man, in a great degree dispersed, leaving only that state of putrefactive vegetation, of sufficient consistency to form what we term bogs. Vid. Goldsmith's Hist. Earth. *E.*)

* (Derived from the ancient Latin verb *batuo*, to beat, the Roman lictors having their *fascies* made of the branches ; and also in reference to its more vulgar use. *E.*)

(*E. Bot.* 2198. *E.*)—*Hunt. Evel.* 225; i. 218. *Ed.* ii.—*Kniph.* 12—*Gars.* 172. 1—*Dod.* 839. 2—*Ger. Em.* 1478—*Lob. Obs.* 607. 2; *Íc.* ii. 190. 2—*Park.* 1400. 8—*Matth.* 142—*Blackw.* 240—*Ger.* 1295—*J. B. i.* b. 149—*Trug.* 1113.

(*Bark* snowy (or silvery. *E.*) white, with a papyraceous epidermis, (peeling off in thin laminae. *E.*) *Leaves* alternate, having leaf-stalks, egg-trowel-shaped, unequally serrated, rather pubescent underneath, in autumn changing to a golden colour. *Seeds* winged. *Fl.* Brit. *E.*) *Branches*, the lesser deep chesnut-coloured. *Barren Catkins*, scale tipped with brown, with smaller scales fixed to the centre. *Blossom* egg-shaped, concave, green.

Var. 1. Branches upright, stiff, straight.

Var. 2. Branches pliable, elegantly pendent; leaves smooth; (branches more warty. *E.*)

(WEeping or Drooping Birch. *E.*) *B. pendula.* Roth. Gmel.*

BIRCH TREE. (Scotch: *Birk.* Irish: *Beihé.* Welsh: *Bedwen guffredin.* Gaelic: *Am. beatha.* *E.*)† Woods and moist hedges. T. April—May.‡

B. NA'NA. Leaves circular, scalloped.

* (A taller tree, and of more rapid growth, than the common kind, therefore sometimes preferred for planting. *E.*)

† (Throughout Europe the same name, with little variation, is bestowed on this tree; and that derived from *Birka* or *Birke*, in reference to the pre-eminent beauty and utility of its bark. *E.*)

‡ (The beautiful laminae of the silken bark were used by the ancients as a *papyrus* for writing tablets before the invention of paper; and, according to Pliny and Plutarch, the works composed by Numa, (who had forbidden his body to be burnt,) were discovered in the tomb in a legible state, four hundred years after his interment. *E.*) The Birch is liable to a disease, which causes it to send out a great number of shoots in the middle of a branch, and matted together, at a distance resembling a rook's nest; the leaves upon those shoots are downy and soft. It grows in all kinds of soil, but best in shady places. It bears cropping. It is hurtful to pasturage. The wood is firm, tough, and white: women's shoe heels, and packing boxes, are made of it. (In France it is generally used for making wooden shoes. *E.*) It is planted along with hazel to make charcoal for forges. In the northern parts of Lancashire, the slender twigs are formed into besoms for exportation. Penn. Tour. The leaves afford a yellow dye. The bark appears indestructible, (from its resinous quality,) and is extremely useful to the inhabitants of the north of Europe. In Kamschatka hats and drinking cups are formed of it. The Swedish fishermen manufacture shoes of it. (Dr. Clarke assures us that in Lapland he found Birch bark among the miserable ingredients of the household loaf. *E.*) The Norwegians cover their houses with it, and upon this cover they lay turf three or four inches thick. (That the bark is even more durable than the wood it invests, appears from the following singular fact stated by Maupertuis, who, travelling in Lapland, found as many trees blown down as standing. On examining several, he was surprised to find that in such as had lain long, the substance of the wood was entirely gone, while the bark remained a hollow trunk without any signs of decay. *E.*) Torches are made of* it sliced and twisted together, it being highly inflammable. (In Northumberland, fishermen put this bituminous bark into a cleft stick, and lighting it, use it for fishing in the night, and spear the fish attracted by the light. The portable canoes of the North American Indians are commonly constructed with this material, and on the banks of the lakes of the north of Europe are produced those enormous Birch trees, the bark of a single one of which is sufficient to form a large canoe. *E.*) If a hole be bored into the tree when the sap rises in the spring, a sweet liquor distils from it, which, properly fermented, with the addition of sugar, makes a pleasant wine. (This process is performed in March, and four or five punctures may be made in a large tree, which has been ascertained to yield nearly its own weight of sap, and that without material injury. When the weather changes from warm to cold, Birch trees cease to bleed, and on returning warmth, begin again. The contrary obtains in Walnut. With these sweet

Dicks. H. S.—*Fl. Ross.* 40. *D, E, F, G.*—(*E. Bot.* 2326. *E.*)—*Amæn. Acad.* 1. at p. 351—*Fl. Lapp.* 6. 4—*Lightf.* 25. at ii. p. 575—*Fl. Dan.* 91.

saps one bushel of malt will make as good ale as four bushels with ordinary waters. Vid. Dr. Yonge, in *Phil. Tr.* 43. Birch juice is chiefly recommended in scorbutic disorders, and is considered to be diuretic.

“ Even afflictive Birch,
Cursed by the unlettered idle youth, distils
A limpid current from her wounded bark,
Profuse of nursing-sap.”

“ Thus it appears that the Birch tree supplies to the northern peasant his house; his bread, his wine, and the vessels to put them in; and some part of his clothing; the seeds, too, are the food of the ptarmigan, upon which, in a great measure, he subsists; and the leaves sometimes furnish his bed. From Birch also is prepared the Moxa, which he considers an efficacious remedy in all painful diseases.” *Sylv. Sketches.* Birch buds exhale a delicious fragrance after vernal showers; as remarked by Sir Walter in one of his happy illustrations of Highland scenery,

“ The Birch-trees wept in fragrant balm :”

And hence doubly eligible for pleasure grounds. *E.*) The leaves also are employed by the Finland women in forming a soft elastic couch for the cradle of infancy. It is but too well known that, during winter, hares do great injury to trees by feeding on their bark. Lime and Alder are said to be exempt from their depredations; but of Birch they are particularly fond. *E.*) Horses, cows, goats and sheep eat it. Swine refuse it. (On this tree the Entomologist may discover *Rhyphites Betulae*, *Elater holosericeus*, *Deporaus Betulae*, *Apion Glycenhaliæ*, *Haltica oleracea*, *Chrysomela clavicornis*, *C. Betulae*, *Geometra pendularia*, *prænotata*, *notata*, and *olivaria*, *Platypteryx curvula*, *Buprestis viridis*, *Livia (Coccus) Betulae*, *Vanessa Antiopa*, *Thecla Betulae*, *Tortrix Beulectana*, and *trapezama*, *Platypteryx lacertianaria*. The beautiful *Agaricus muscarius* var. 4, seems to delight in the shade of the Birch tree. Both in England and Scotland the finest specimens we have seen were so situated, as though by dripping, exhalation, or some other process, a peculiar *pabulum* was afforded. The crimson patches frequently apparent on the leaves are assemblages of *Erineum Betulae*: *Grev. Scot. Crypt.* 21, and the very curious *Erineum tortuosum*, in ferruginous or whitish irregular spots; with peridia long, cylindrical, entangled with each other; is sometimes similarly situated. *Grev. 94. Dothidea (Sphæria) betulina.* *Grev. Scot. Crypt.* 200. “ Epiphyllous, somewhat angular and irregular in form, subconfluent, tuberculose, black, shining, black within, the cellulæ white.” On leaves of *B. alba*, more frequent than on *B. nana*. On the trunks and branches of dead Birch trees will be found *Didymosporium betulinum*, produced beneath the epidermis of the bark, bursting through it and becoming effused, in the form of little deep black conical masses, one to three lines in breadth; as represented in *Grev. Scot. Crypt.* 273. Birch bark, (continually peeling off, and affording a beautiful illustration of the vegetable epidermis or cuticle,) when burnt, is so bituminous as to correct impure air; and even “*Bitumen ex ca Gallia excoquant*,” says Pliny; who also makes allusion to the *fusces*, or bundles of *Birchen rods* which were carried by the *lictors* before the Roman magistrates, with an ax bound up in the middle of them so as to appear at top, “*terribilis magistratum virgis*.” Nor has Coles, in his *Paradise of Plants*, neglected to record the more opprobrious application of these ductile twigs; “the civil uses whereunto the Birch tree serveth are many; as for the punishment of children both at home and at school; for it hath an admirable influence upon them, to quiet them when they are out of order; and therefore some call it *Make-peace*.” And Shenstone, in his *Schoolmistress*, admirably describes the effect even of a glance of the “*Birchen tree*” upon the juvenile culprits:

“ For not a wind might curl the leaves that blew,
But their limbs shuddered, and their pulse beat low;
And as they looked they found their horror grow,
And shaped it into rods, and tingled at the view.”

Since, however, has commenced the high career of the vaunted “march of intellect,” such applications are no longer found necessary to stimulate the energies of “operative” academicians; and, were they not still deemed indispensable for the excitation of patrician talent in

Shrub upright, (one or two feet high. E.) *Trunk* hard, stiff. *Bark* brown, roughish, resembling that of *Ulmus campestris*. *Branches* expanding, straight, scattered, tapering, woolly, somewhat gummy at the ends. *Leaves* (on short foot-stalks; E.) rather broader than they are long. *St.*, commonly three from each bud. *Lightf.*; but frequently single and alternate, generally entire at the base, scollops often pointed. *Cutkins* about half an inch long. *Woodw.* (*Fertile Cutkins* at the extremity of the branches, small. E.)

our public schools, it were to be feared, that the truly laudable and time-honoured practice might become obsolete. The most elegant varieties of this tree may be observed to the utmost advantage in the romantic vale of the Llugwy, near Bettws, North Wales. Wilson well depicts such a spot:

————— “ On the green slope
Of a romantic glade we sat us down,
Amid the fragrance of the yellow broom,
While o'er our heads the weeping *Birch* tree streamed
Its branches, arching like a fountain shower.”

The Rev. Hugh Davies describes the largest Birch he had ever seen as growing on a farm called Llwyn On, in the parish of Llanedwen, Anglesey. Mr. Winch states, that on the margins of the Cumberland and Westmoreland lakes, trees of this kind may be observed equalling in size and beauty those of Norway and Sweden, but are not found on the higher mountains. Such a display of vegetative symmetry and elegance as the Birch frequently exhibits could not but inspire the rustic bards both of ancient and modern times, and must continue so to do while the remembrance of “fair Ellen” attracts to

“ Where the rude Trossach's dread defile
Opens on Katrine's lake and isle:”

or while

“ By Oughtertyre grows the ail,
On Yarrow banks the *birken* shaw.”

The “Birks of Invermay” also aspire to the interest of classic ground; nor has the tender sentiment ever been more feelingly blended with rural scenery, than in the following effusion of the poet of nature:

“ Now summer blinks on flowery braes,
And o'er the crystal streamlet plays,
Come let us spend the lightsome days
In the Birks of Aberfeldy.
Bonny lassie will ye go
To the Birks of Aberfeldy?
While o'er their heads the hazels hing;
The little birdies blythely sing,
Or lightly flit on wanton wing
In the Birks of Aberfeldy.
The hoary cliffs are crown'd wi' flowers,
White o'er the fanns the burnie pours,
And rising weets wi' misty showers
The Birks of Aberfeldy.
Let fortune's gifts at random flee,
They ne'er shall draw a wish from me,
Supremely blest wi' love and thee
In the Birks of Aberfeldy.”

Of all the varied tints displayed by the declining year, none exceeds in brilliancy the foliage of

————— “ the golden *Birch*,
With bark of silver hue:”

Which forcibly calls to mind the instructive reflection of a recent author, that “As the bursting buds and the bright verdure of the leaflets of the spring awaken the instinctive raptures of every unsophisticated heart, so even the leaf's decay in autumn decorates the

DWARF BIRCH. Mountains and wet heaths in Scotland.

S. May.*

MYRICA.† Flowers in catkins, on different plants. *Cal.* two-leaved : *Bloss.* none.

Fert. Fl. Drupa one-celled, superior : *seed* one.

M. GA'LE. Leaves spear-shaped, slightly serrated ; stem shrubby.

(*E. Bot.* 562. *E.*)—*Kniph.* 9—*Fl. Dan.* 327—*Ger.* 1228—*Gars.* 397—*Dod.* 780. 2—*Ger. Em.* 1414—*J. B.* i. b. 225—*Lob. Adv.* 417, *Ic.* ii. 110. 2—*Lob. Obs.* 547. 2—*Park.* 1451. 5.

Stems (a few feet high. *E.*) smooth, rust-coloured, sprinkled with white dots. *Flower-buds* above the leaf-buds, at the ends of the branches, whence, as soon as the fructification is completed, the end of the branch dies, the leaf-buds which are on the sides shoot out, and the stem becomes compound. *Buds* composed of nine leafy, shining scales ; the first nearly opposite, very short, rectangularly pointed ; the rest egg-shaped, blunt. *Leaves* convoluted, sprinkled with resinous points, serrated towards the end, on leaf-stalks, (emitting a fragrant odour, as do the catkins, especially when rubbed. *E.*) *Flowers* appearing before the leaves. *Fertile spike* oblong, composed of five rows, and in each row five berries. *Berries* thick, rather globose, angular, taper-pointed, with three shallow clefts, a small tooth being fixed to each, sprinkled with golden resinous dots. *Linn.* *Catkins* barren and fertile on the same plant. In other specimens from the same spot, catkins on distinct plants. *St.* Sometimes I have found a few fertile florets upon the barren catkins.

SWEET GALE. DUTCH MYRTLE. (Welsh : *Madywydd* ; *Gwyrddling*. Gaelic : *Roid*. *E.*) On bogs in gravelly soil, not unfrequent, and generally in large quantity. (In Moreton Moors, three miles from Blymhill, Shropshire. *Rev. S. Dickenson.* Harwoodale Moors, near Scarborough. *Mr. Travis.* *E.*) Highlands of Scotland. Near Rufus's Monument in the New Forest. (At Swan Pool, near Falmouth ; and near the coal pits on Bovey Heath-field, Devon. *Rev. Pike Jones.* On moors, near Harbottle, Northumberland. Common about the lakes of Westmoreland and Cumberland. *Mr. Winch.* Marsh, Gulval, and Ludgvan, Cornwall. *Dr. Forbes.* Abundant on the moors in Carmarthenshire, particularly about Llyn Idwell and Llyn Ogwen, between Capel Curig and Bangor. *E.*)

S. May.†

woods with rich varieties of harmoniously blended hues, and allures the contemplative mind by its transitory beauty, to regard with attention the most solemn of moral warnings." *Bot. Théb. E.*)

* *Linnaeus* observes that those plants which chiefly grow upon mountains, are rarely found any where else but in marshes : probably because the clouds resting upon the tops of the mountains keep the air in a moist state, as do fogs, the clouds of the lower atmosphere, in meadows and marshes. The leaves dye a finer yellow than that yielded by *B. alba*. It affords the humble Laplander in the summer, when he lives on the mountains, fuel for the fires which he is obliged constantly to keep in his hut to defend him from the gnats ; and, covered with the skin of the rein deer, it forms his bed. *Linn.* (The harness for horses in some parts of the Highlands of Scotland is made of the twisted twigs of Birch. *Garnett's Tour. E.*)

† (From *μυρον*, sweet ointment ; in reference to its fragrance. *E.*)

‡ (The plant very fragrant, but the leaves bitter : they are, however, in France, dried and powdered to be used for spice. The northern nations formerly used it instead of hops ; but unless it be boiled a long time it is apt to occasion head-ache. The catkins boiled in water throw up a waxy scum, which, gathered in sufficient quantity, would make candles. From another species of this plant, *M. cerifera*, (Candle-berry tree of North America ; *E.*) the myrtle candles are prepared. (And *M. cordifolia* produces a kind of wax, which,

CUSCUTA.* *Cal.* four or five-cleft: *Bloss.* one petal, bell-shaped: *Caps.* two-celled, cut round: *Seeds* in pairs.

C. EUROPEA. Flowers nearly sessile; blossoms without scales: *summits* acute.

(*Hook. Fl. Lond.* 67—*E. Bot.* 378. E.)—*Blackw.* 554—*Fl. Dan.* 199—*Fuchs.* 348—*Matth.* 1279—*Trag.* 810—*Dod.* 554—*Lob. Obs.* 233. 1—*Ger. Em.* 577—*Park.* 10. 2—*Ger.* 462—*J. B.* iii. 266.

This plant is parasitical, without seed-lobes. The seed itself opens and puts forth a little spiral body, which does not seek the earth to take root, but climbs in a direction from right to left, up other plants, from which, by means of vessels, it draws its nourishment. *Leaves* none, except here and there a very small membranous scale lying close under a branch. *Linn.* (*Stem* thread-shaped, red, much branched, climbing to the height of two or three feet, adhering occasionally by short radicles. *Flowers* in dense round heads, whitish, usually five cleft, and pentandrous; destitute of scales in the throat of the tube. *Calyx* reddish. *Tube* of the blossom bell-shaped, subsequently globose; limb short, permanent, as well as the *stamens*. *Germs* globular. *Styles* short, reddish, with acute *stigmas*. *Capsule* globose, reticulated, invested with the dry blossom. *Sm.* *Hook.* Whole plant purplish red, except the blossom, which is nearly white.

(GREATER DODDER. (At Shipston-upon-Stour, Worcestershire. *Rev.* Dr. Jones, in *Eng. Fl.* Musselburgh, near Edinburgh. *Mr.* Neill. *Hook. Scot.* Badsey; S. Littleton, Worcestershire. *Purton.* E.) On hops, nettles, flax, thistles, and gorse. A. Aug.—Sept.†

(C. EPITHYMUM. Flowers sessile; with a notched scale at the base of each stamen. E.)

E. Bot. 55—*Fl. Dan.* 427—*Park.* 10. 1—*Matth.* 1277—*Pomet.* 42. 9.

according to Thunberg, serves the Dutch boors for candles, and the Hottentots for cheese! E.) It is used to tan calf skins. Horses and goats eat it; sheep and cows refuse it. Gathered in the autumn it dyes wool yellow. *Linn.* The Welsh make use of it for the same purpose. They also lay branches of it upon and under their beds, to keep off fleas and moths, and give it as a vermifuge in powder and infusion. *Penn. Wales* iii. p. 147. Its essential oil rises in distillation. When growing within reach of a sea-port I have known sailors gather it to make betoms for sweeping their ships.

* (Supposed of Greek origin, and applied originally to a parasitic plant; but the exact meaning of the term is not now understood. E.)

† (The fresh plant boiled in water, with a little ginger, operates as an aperient. *Hill.* E.) The seeds sown in a pot produced plants; but which quickly died, unless they could attach themselves to some other plant. *Park.* and *Ray Hist.* As soon as the shoots have twined about an adjoining plant, they send out from their inner surface a number of little vesicles or papillæ, which attach themselves to the bark or rind. (*Mr.* Thomson says, "Dodder germinates in the earth, and, rising above it, shoots out filiform stems, which twine around the neighbouring plants, when its original root decays. He considers these small tubercles as absorbing warts, (*haustoria*), performing at the same time the functions of an attaching fulcrum (prop), and of a nutrient absorbing organ. By degrees the longitudinal vessels of the stalk, which appear to have accompanied the vesicles, shoot forth from their extremities, and make their way into the foster plant, by dividing the vessels, and insinuating themselves into the tenderest part of the stalk; and so intimately are they united with it, that it is easier to break than to disengage them from it. *Guetard* in *Gent. Mag.* "Thus throughout the vegetable world," as the author of the 'Wonders of the Vegetable Kingdom' justly remarks, "a mutual dependence every where subsists. The strong assist the weak; and the helpless plant, which is unable to support itself, never seeks, without obtaining, the assistance of its more powerful neighbour. What a beautiful, and important lesson for the human race!"

(*Stems* much twisted and entangled, deep red. *Flowers* most frequently four-cleft and tetrandrous. *Cal.* red, acute. *Bloss.* white, with a short, funnel-shaped tube. *Stam.* with an inflexed, crescent-shaped, finely notched scale, close to the base of each. *Styles* rather elongated, spreading, with simple *stigmas*. Sm. Mr. Gerard. E. Smith denies its being an annual; having collected it in flower as early as March; when its fibres were thickly matted for hybernation. E.)

LESSER DODDER. (Irish: *Cluhan Dearg*. E.) Corn-fields and heaths; in various parts of England. (In gorse, in great quantities between Penzance and the Land's End. On clover fields half a mile west of Stanton, Cumberland, its only station in the district. John Hogg, Esq. in Winch Geog. Dist. In great abundance on a hedge in a lane leading from Greenham Common to Chamber House, near Newbury. Mr. Bicheno. At Willesboro' Leas, Kent. Rev. Ralph Price, in Sm. Obs. Near Aberdeen. Mr. A. Smith; and at Musselburgh. Mr. Neill. Hook. Scot. E.) A. June—July.

Var. 2. Cup fleshy at the base; five-cleft: blossom five-cleft stamens five; pistils two; seeds two.

In Devon and Cornwall, with the preceding. (Though not exactly to be classed among the *Plantæ Rariores*, these productions are so singularly interesting, that we venture to indicate a few well-marked localities. (Both the above varieties form extensive matted patches over the gorse on Haldon, above Bishop's Teignton, near the road from Newton to Dawlish, Devon. They have been remarked by Miss Roberts hanging in elegant pink festoons over the rocks at Norte, near Ilfracombe. In profusion on a common about equidistant between Salisbury and Bridport, near the road. Mr. C. Fox. On furze bushes near Mollance, in Galloway. Dr. Burgess, in Hook. Scot. E.) June.

TRIGYNIA.

BUXUS.* Barren and fertile flowers on the same plant.

B. *Calyx* three-leaved: *Bloss.* two petals: *Germen* only a rudiment.

F. *Calyx* four-leaved: *Bloss.* three petals: *Caps.* three-celled; three-beaked: *Seeds* two.

B. SEMPERVIRENS. (Leaves egg-shaped, with foot-stalks hairy at the edge. E.)

(*E. Bot.* 1341. E.)—*Ludw.* 4—*Kniph.* 1—*Sheldr.* 85—*Walc.*—*Matth.* 190—*Ger.* 1225. 1—*Trag.* 1069—*Dod.* 782. 1—*Myrt.* 157. 35—*Lob. Obs.* 562; *Ic.* ii. 2. 128—*Ger. Em.* 1410—*Park.* 1429. 1—*Fuchs.* 642—*Blackw.* 196—*Lonic.* i. 22. 2.

(A low tree, or smooth, ever-green shrub. *Leaves* opposite, nearly sessile, oval, notched at the end, very entire, of various breadths, shining. *Petals* concave, shorter than the stamens. Fl. Brit. E.) *Leaves* oval, thick, glossy. *Blossoms* greenish white.

* (Called by the Greeks *πυξος*, from *πυξα*, dense, thick; but whether the epithet was originally applied to the foliage, or to the compact nature of the wood, may be questionable. E.)

Box Tree. Woods and hedges. Box-hill, near Dorking, plentifully. Ray. Woods of them at Boxwel in Cotswold, Gloucestershire, and Boxley, Kent. R. Syn. In plenty on the Chalk Hills near Dunstable. Mr. Woodward. S. April.*

Var. 2. *Angustifolia*. Leaves narrower. On Box-hill. R. Syn.

* The wood is yellowish, very hard and smooth, and not apt to warp or split, therefore well adapted for the use of the turner.

("Nor Box, nor Lime, without their use are made,
Smooth-grain'd, and proper for the turner's trade." Virg.

Combs, (in Japan rendered ornamental by a scarlet varnish, E.) mathematical instruments, knife-handles, tops, screws, and button-moulds are made of it. (For the wood engraver it is almost indispensable. The wood is sudorific and alterative. A decoction of it is said to be remarkably efficacious in promoting the growth of hair. E.) An empyreumatic oil, distilled from the shavings, is often used as a topical application for hemorrhoids, and seldom fails to procure ease. It will frequently relieve the tooth-ache, and has been given internally in epilepsies. The leaves, powdered, are cathartic, and destroy worms. (That the ancients were accustomed to employ box wood for the same purposes as do the moderns, may be collected from classical authority. "Si *buxos* inflare juvat," of Virgil, and the "*tibia buxi*" of Ovid, have an equally obvious meaning; while Martial proves that in his time combs were made of this material. From Pliny we learn that the Roman gardens were subdivided by clipped Box hedges. E.) In the south of Europe Box trees are cultivated in gardens, and kept in flower pots, with as much attention as we bestow upon myrtles. (In Britain Box is a most valuable evergreen for the shrubbery, and in favourable situations often assumes an elegant appearance. Dwarf Box affords a firm and enduring border for flower beds. The Box tree is often used, (with other evergreens,) for the internal decoration of churches at Christmas, a custom which, among various interesting associations, may be considered in connection with Isaiah 60. 13, "The glory of Lebanon shall come unto thee; the Fir tree, and the Pine, and the Box tree; to beautify the place of my sanctuary." Our forefathers were wont to replace the Christmas evergreens with sprigs of Box on Candlemas-day, and thence forward at particular seasons, with a succession of flowers.

"Down with the rosemary and bays,
Down with the misseltoe;
Instead of holly, now upraise
The greener Box for show.

The holly hitherto did sway,
Let Box now domineer,
Until the dancing Easter-Day,
Or Easter eve appear." Herrick.

Wordsworth relates that in the north of England it is customary at funerals to provide sprigs of Box, which are thrown by each of the attendant mourners into the grave of the deceased. It was formerly much more abundant in England than it is at present; and in the reign of Charles the First, the "rare, natural bowers, cabinets, and shady walks in the Box copses," according to Evelyn, were much admired. Isolated Box trees may be occasionally observed fifteen to twenty feet high, and as many inches in girth. Single plants of such dimensions may be seen in different parts of England, but on the Surry hills and other districts in which the Box tree prevails, they attain to a still larger size. Raised from seed they will be fit to cut down in about thirty years. It is the only European wood that will sink in water; and is often sold by weight. One cutting of the wood has been sold for much more than the value of the free-simile of the land on which it grew. It forms the best possible cover for game, and the intense bitter of its leaves secures it from the ravages of cattle. The loppings of Box trees prove rapidly poisonous to pigs, and probably to other animals. The punctures of the Box *Chermes* make the leaves curl and grow hollow in the shape of a cap, which, by the union of those inflexed leaves, produces at the extremities of the branches, knobs in which are secreted the larvæ of that

TETRAGYNIA.

I'LEX. *Stamens* and *pistils* variously disposed: *Calyx* four-toothed: *Bloss.* monopetalous, wheel-shaped: *Style* none: *Berry* four-seeded.

I. AQUIFO'LIUM. Leaves egg-shaped, acute, spinous, wavy, on leaf-stalks: flowers in a cluster, axillary.

(*E. Bot.* 496. *E.*)—*Kniph.* 11—*Fl. Dan.* 508—*Mill.* 46—*Hunt. Evel.* 383. i. p. 362. ed. ii—*Blackw.* 205—*Nat. Displ.* ii. 9. *A. at* p. 71—*Dod.* 658—*Matth.* 161—*Jonst.* 63. 6—*Ger.* 1155—*Lob. Obs.* 582. 1—*Ger. Em.* 1338 *Walck.*—*Munt.* 164. 38—*Trag.* 1067—*Park.* 1487. 1.

(Usually a small tree, with smooth, greyish bark; sometimes attaining to thirty feet in height. *E.*) *Leaves* rigid, surrounded by a strong cartilaginous border; tough, shining, evergreen; frequently indented, and each tooth terminating in a strong, sharp thorn, (except sometimes in very aged plants. *E.*) The leaves upon the same tree are some of them entire, (especially the uppermost; *E.*) and others thorny. *Flowers* small, greenish white, tinged externally with purple, lateral, on short fruit-stalks, generally three together, springing from a sort of scale upon the branch. *Berries* numerous, scarlet, crowned with the cup, which turns black. *Seeds* three or four. I have found it in flower so late as the second week in June, and then *all the flowers* had four stamens and four pistils.

HOLLY TREE. (*HOLME.* Irish: *Callin.* Welsh: *Celyn.* Gaelic: *An cuillfhionn.* *E.*) Woods, hedges, heaths. On the north side of the Wrekin, in Shropshire, the trees grow to a large size; (also in Needwood Forest, and other like situations. *E.*) T. May.*

Var. 2. *Aquifol. baccis luteis, &c.* Ray Syn. 466. Berries yellow.

insect. The leaves also often form a receptacle for the *Puccinia Buxi*, which, though to the naked eye appearing but an insignificant spot, under the microscope exhibits a structure truly admirable; as is well displayed in *Grev. Scot. Crypt.* 17, and therein thus characterized: "P. scattered, reddish brown, round, convex, surrounded by the ruptured epidermis; sporidia oblong, two-celled, yellow, with a long filiform stem." *E.*)

* All the varieties which gardeners reckon, to the amount of forty or fifty, are derived from this one species, and depend upon the variegations of the leaves or thorns, and the colour of the berries. (One remarkable variety produced by culture, called the *hedge-hog*, is spinous on the disk of the foliage: the *gold* and the *silver-edged* are peculiarly elegant. *E.*) Sheep are fed in the winter with the croppings. Penn. Tour, 1772, p. 32; as also deer. Birds eat the berries. The bark fermented and afterwards washed from the woody fibres, makes the common birdlime. Holly makes an impenetrable fence, and bears cropping;

(*"A hedge of Holly, thieves that would invade,
Repulses like a growing palisade."* Cowley. *E.*)

Nor is its verdure, or the beauty of its berries, ever observed to suffer from the severest of our winters.

(*—* *"Mala furta hominum densis mucronibus arcens
Securum defendit inexpugnabilis hortum,
Exornatque simul, toto spectabilis anno,
Et numero et viridi foliorum luce nitentum."* Couleii, lib. vi. *E.*)

The wood is used in veneering; and is sometimes stained black to imitate ebony. Handles

Wiston, near Buers, Suffolk; Dale, in R. Syn.; and Wardour Castle, Wilts. Ray. In the hedge by the road side leading from Edinburgh to Queens-ferry, about a mile and half from the Ferry. E.) S. April—June.

POTAMOGETON.* *Cal.* none; *Petals* four; *Style* none :
• *Seeds* four, (naked, sessile. E.)

P. NA'TANS. Upper leaves oblong egg-shaped, on leaf-stalks; floating, (coriaceous; lower leaves strap-shaped, membranous, sessile. E.)

for knives, and cogs for mill-wheels, are made of it, (as also hones for wetting of razors. E.) The holly is peculiarly valuable, as flourishing with great beauty under the shade and drip of the more lofty deciduous trees. (Holly trees are difficult to remove: the autumn is the most favourable season for transplanting them. The decoration of houses and churches with Holly branches at Christmas, is supposed by some antiquaries to be derived from Druidism, and in the darker ages designed to appease certain sylvan sprites, by affording them shelter till a more genial season should revive their favourite haunts. Without attempting to refute so puerile a conceit as this motive would appear to involve, it seems generally admitted, as Mr. Phillips observes, that the connection of evergreen sprigs and boughs with religious rites may without difficulty be traced to heathen worship; and this tree being peculiarly appropriate to such purposes, was originally denominated *Holy*. In allusion to the enduring nature of the plant, branches were sent by the Romans to their friends with new years' gifts, as emblematical of a lasting attachment. The finest young plants are too often cut to make coachmen's whips, or large Holly trees would not be so scarce. When growing luxuriantly in shrubberies, their constant foliage and shelter render them highly advantageous. Holly may be trained as a shorn hedge to fifteen or even twenty feet in height. At Tunbridge the wood is manufactured into various fancy articles. The berries, like those of Hawthorn, usually remain in the earth two years before they germinate, unless they have passed through the stomach of fowls, when they vegetate the first year. To give them a similar fermentation by art, we are recommended to mix wetted bran with the seeds, and when in ten days it begins to ferment, to sprinkle the mass with warm water; after which, in about a month, the berries will begin to vegetate, and be fit for sowing; thus may young plants be raised in one year instead of two. Though Hollies are generally considered of slow growth, Evelyn raised hedges four feet high in four years, from seedlings taken out of the woods. E.) It has been remarked by Linnæus that the lower branches within reach of cattle bear thorny leaves, whilst the upper ones, which stand in need of no such defence, are without thorns; (a striking example of design in nature, of which the poet Southey happily avails himself:

“O reader! hast thou ever stood to see
The *Holly* tree?
The eye that contemplates it well, perceives
Its glossy leaves
Ordered by an intelligence so wise,
As might confound the atheist's sophistries.
Below, a circling fence, its leaves are seen
Wrinkled and keen;
No grazing cattle through their prickly round
Can reach to wound;
But as they grow where *nothing is to fear*,
Smooth and unarmed the pointless leaves appear.”

The leaves of the Holly, by means of the impenetrable varnish that is spread over them, or rather polished surface, are long impervious to the common agents of dissolution; but their destruction is at times accelerated by the minute excrescent fungi, which break the surface, and admit humidity. Vid. Journ. Nat. Pl. v. f. 2. The dead leaves are frequently infested with *Cleuthospora* (*Sphaeria*) *phacidioides*. Grev. Soot. Crypt. 253. “Orbicular, plane, black, shining, the perithecia bursting at length by three or five short pale segments; sporidia somewhat cylindrical, escaping.” E.)

* (From ποταμός, a river; and γύρω, near: alluding to its aquatic station. E.)

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Fl. Dan. 1025—(*E. Bot.* 1822. E.)—*Fuchs.* 651—*Trag.* 688—*Mill. Ger Em.* 821. 1—*Prt.* 5. 4—*H. Ox.* v. 29, row 1. 1. at p. 596—*Ger.* 1—*Park.* 1254. 1—*Matth.* 1137.

(Stems much branched, extending several feet. *Stipulæ* large, concave, membranous. *Spikes* one to two inches long, rising above water from the base of the leaves, on fruit-stalks as large as the stems. *Flowers* sessile, numerous, olive green. *Anthems* yellow. *Leaf-stalks* the most part longer than the leaves. E.)

When growing in a place which is dried up in summer, it surprising changes its appearance, becoming upright, and resembling a small *Plantago*. *Linn.* *Leaves* alternate, except the upper pair, which are opposite, lower ones spear-shaped, on long leaf-stalks; upper ones oval, with shorter leaf-stalks. *Stem* about four inches high.

BROAD-LEAVED POND-WEED. (Irish: *Duilleag na Auchun.* Welsh: *Dyffyllys llydan-dduil.* *Tyfod y ci.* E.) In ponds and slow rivers, common. P. July—Aug

(P. HETEROPHYLLUM. Leaves under the surface of the water membranous, strap-spear-shaped, sessile; those floating coriaceous, elliptical, having leaf-stalks; fruit-stalks thickest upwards.

E. Bot. 1285—*Fl. Dan.* 222; but wanting the floating leaves.

A smaller plant than the preceding. *Floating-leaves* thinner, more pointed, seldom two inches long. *Stems* very much branched, wide-spreading, cylindrical, leafy on all sides. *Leaves* very entire, pale green, slightly striated. *Sheath-scales* within the leaves, oblong, bluntish. *Flora.* *leaves* broader than the sheath-scales, keeled, concave. *Spine* simple greenish. *Fl. Brit.*

VARIOUS-LEAVED POND-WEED. (Welsh: *Dyffyllys amryddail.* E.) *I heterophyllum.* Schreb. Hoffm. Willd. *P. palustre.* Teesd. Relh. In ditches and stagnant ponds. In ditches near Beverley, Yorkshire. M. Teesdale. Berrington Pool, Shropshire. Rev. Mr. Williams. At Old Buckenham, Norfolk. Mr. D. Turner. Near Forfar, Scotland. Mr. C. Don. *Fl. Brit.* Near Diss, Norfolk. Mr. Woodward. Burwell Fen, Cambridgeshire. Relhan. P. July—Sept. E.

(P. FLUTANS. Lower leaves spear-shaped, tapering to a point, membranous: upper-leaves oval-spear-shaped, somewhat coriaceous: all the leaves having leaf-stalks.

(*Hook. Fl. Lond.* 172. E.)—*E. Bot.* 1286—(*Fl. Dan.* 1450. E.)

Nearly the whole plant grows under water; the uppermost leaves alone swimming on the surface, and bearing up the spikes. *Stems* floating, ve

* The leaves floating upon the surface of the water afford an agreeable shade to fish and are the habitation and food of *Phalena Potamogeton*. (The common *Water-fly* does not swim, in the usual manner, upon its belly, but on its back; (and hence denominated *Notonecta*;) nor can we help admiring that fitness of this insect for its situation, as it feeds on the under side of plants which grow on the surface of the water, and has even a mouth peculiarly placed to enable it to take its food with greater convenience. E.) The roots are a favourite food of swans. Their love of this plant, so troublesome in still pieces of water is such, that by harassing it in search of its succulent roots during winter, a pair of them have almost destroyed it in the whole extent of nearly five acres of water, which at times has been completely matted over with it. Mr. Stackhouse. (These aquatics, when collected in large quantities, are serviceable for manure. E.)

long; branched, leafy. *Leaves* reddish green, very entire, slightly scored, alternate. *Sheath-scales* widely spear-shaped. *Fruit-stalks* axillary, solitary, nearly as long as the leaves; rather thick. *Spike* dense, reddish, Fl. Brit.

LONG-LEAVED FLOATING POND-WEED. Welsh: *Dyfr-llys amryliw*. In slow streams, ditches and lakes not unfrequent. In ditches in marshy ground near Beverley. Mr. Teesdale. Lilleshall mill-pool, Shropshire. Rev. Mr. Williams. At Scol, Norfolk. Mr. Woodward. Fl. Brit. In Whey Sike on Teesdale Forest; and the ditches communicating with Hell Kettles. Mr. E. Robson. Winch Guide. Abounding in the river Blythe by Halesworth. Hooker. In the Clyde at Dalbeth. Mr. Hopkirk. In ditches and lakes near Forfar. Mr. Don. Fl. Lond. Braint-river, rivulet in Bryngola demcsne, Llangwillo, Anglesey. Welsh Bot. P. July—Aug. E.)

P. PERFOLIATUM. Leaves heart-shaped, embracing the stem, (uniform, all submersed. E.)

E. Bot. 168—Fl. Dan. 196—Dod. 582. 3—Ger. Em. 822. 3—J. B. iii. 778. 2—Pct. 5. 6—H. Ox. v. 29. row 2. 3. at p. 596.

Leaves heart-egg-shaped, very pellucid, like green oiled silk; brittle when dry. *Blossoms* yellowish brown, on an oblong-ovate spike.

PERFOLIATE POND-WEED. (Welsh: *Dyfr-llys trydwll*. E.) Slow rivers and ponds, common, but the *fruit-stalks* the only part which rises above the surface of the water. P. June—Aug.

P. LUCENS. (Leaves elliptic-lanceolate, pointed, membranous, stalked, repeatedly triple-ribbed, all submersed. Spike dense, many-flowered. E.)

(E. Bot. 376. E.)—Kniph. 5—Fl. Dan. 195—Pct. 5. 5—J. B. iii. 777. 1—Dod. 582. 2—Ger. 822. 4—H. Ox. v. 29. 4. at p. 596.

(*Leaves* egg-spear-shaped, flat, attenuating into leaf-stalks, beautifully green and pellucid, like those of the preceding species; sometimes eight inches long, and one and a half broad, remarkably reticulated by numerous transverse veins. *Blossom* reddish.

(SHINING POND-WEED. Welsh: *Dyfr-llys dislucr*. E.) Rivers and ponds. P. June—July.

P. DENSUM. Leaves egg-shaped, tapering to a point; opposite, crowded: stem dichotomous: spike four-flowered.

(E. Bot. 397. E.)—J. B. iii. 777. 2.

(*Plant* rather small, of a brighter green than some other species. *Leaves* wholly submersed, somewhat recurved, an inch or an inch and a half long, crowded together towards the end of the stem. Head of *flowers* quadrangular, (as in *Adoxa moschatellina*), rising above the water during impregnation, after which, as Smith observes, it is borne down by the increasing branches, and ripens its seed below. E.)

LESSER WATER CALTROPS. FROGS' LETTUCE. CLOSE-LEAVED POND-WEED. (Welsh: *Dyfr-llys tewdurs*. E.) Ditches and slow streams.

P. May—June.

P. CRISPUM. Leaves spear-shaped, alternate, upper ones opposite, waved and serrated.

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Curt. 5—(E. Bot. 1012. E.)—Fl. Dan. 927—Ger. Em. 824. 2—Park. 124 2—Pet. 5. 9—J. B. iii. 778. 1—Clus. ii. 252. 2—Ger. Em. 824. 3—Par. 1248. 3—Pet. 5. 8.

Stems long, much branched, flattened. *Leaves* two inches long, alternate, a the forks of the stem opposite, sessile, nearly strap-shaped, semi-transparent, crisped at the edges. *Spikes* as long as the fruit-stalks. *Blossoms* six to ten, white or reddish, in short loose spikes.

(Var. 2. *P. serratum*. Huds. *P. crispum* β. Sm. Leaves less obviously undulated, opposite. E.)

GREATER WATER CALTROPS. CURLED POND-WEED. (Welsh: *Dyfr-lllys crych*. E.) Ponds and slow streams, common. P. May—July.*

P. COMPRESSUM. Leaves strap-shaped, obtuse, (spikes about four-flowered. E.): stem compressed.

(*E. Bot. 418. E.)—Fl. Dan. 203—Pet. 5. 10.*

(*Plant* small. *Stipulae* large and conspicuous, whitish. *Stem* wavy. E.) *Leaves* narrower than in the preceding, not waved, (two or three inches long, an eighth of an inch broad. E.) *Spikes* shorter than the fruit-stalks. *Blossom* greenish.

FLAT-STALKED POND-WEED. Slow streams and ditches.

P. June—July.

(Var. 2. Leaves broader and longer. Relh.

Queen's Green, &c. Cambridge.

Mr. Dawson Turner suspects from the great difference of habit, as well as size, that this may prove a distinct species. E.)

(*P. CUSPIDATUM.* Leaves linear, with an oblique taper point: three principal ribs, and numerous intermediate ones, all distinct: stem compressed.

Loes. Pruss. t. 66.

Larger than the last, with which it has, in England, always been confounded. *Leaves* not rounded at the end, but taper off rather suddenly and obliquely into a terminal point, formed of the substance of the leaf: lateral ribs only two, one ft each side, half way between the mid-rib and the margin; often very inconspicuous, but there are numerous intermediate ribs all over the leaf, which do not occur in *P. compressum*.

POINTED-LEAVED POND-WEED. *P. cuspidatum*. Schrad. *P. compressum*. Teesd. Linn. Tr. v. 2. In ponds and rivulets. In a rivulet at Hovingham, Yorkshire. Mr. R. Teesdale. In the lake of Rescobie, and also in the lake of Forfar. Mr. G. Don. Sm. E.)

P. PECTINATUM. Leaves bristle-shaped, parallel, near together, two-rowed, (sheathing at the base: spikes interrupted. E.)

(*E. Bot. 323—Fl. Dan. 186. E.)—Lob. Ic. i. 790—Ger. Em. 828. 4—Pet. 5. 13—Pluk. 216. 5.*

(The plant does not bear blossoms unless it grow in stagnant water, but in running streams the general herbage is larger. Fl. Brit. E.) *Flowers* five or six on each fruit-stalk. Stackh. (*Root* arising from a small

* (Ducks greedily devour this plant, and may be usefully employed to clear ponds infested with it. E.)

tuber. *Stem* cylindrical, much branched, flexuose, leafy. *Leaves* alternate, slender, flattened. *Blossom* whitish, or dull green. E.)

(The slender varieties supposed peculiar to salt-water ditches, which were once considered to constitute the species *P. marinum*, are found to yield no permanent characteristic, the same being observed in fresh water. E.)

FENNEL-LEAVED POND-WEED. (Welsh: *Dyfr-llys gurrychddail*. E.) Rivers and ponds. River Waveney. Mr. Woodward. Entirely filling a pond at Pendarvis, Cornwall. Mr. Stackhouse. (Near the canal bridge, Saltisford, Warwick. Perry. Duddingston Loch, and Loch-end, near Edinburgh. Greville. P. May—July.

P. GRAMINEUM. (Leaves linear, tapering downwards, with solitary, very slender, lateral ribs: stem cylindrical, forked: flower-stalks, from the forks, scarcely longer than the spikes.

E. Bot. 2253.

Herb submersed. *Stem* slender, thread-shaped, wavy. *Leaves* grassy, crowded, three inches long. *Stipulae* usually convoluted, so as to be narrower than the leaves. *Spikes* ovate, dense, generally as long as the stalks. *Seeds* almost globular, with an oblique point. Sm. E.)

GRASSY POND-WEED. Slow streams and ditches. Binsey Common: Ditches by the road side going to Port Meadow, Oxon. Sibthorp. (Observed for many years by the Rev. R. Relhan, in Cambridgeshire. In ditches about Rhyd Marsh, Flintshire. Mr. Griffith. In fish ponds at Castle Howard. Mr. Teesdale. Lakes in Fanet, Donegal. E. Murphy, Esq. E.) P. July.

(*P. LANCEOLATUM*. Leaves lanceolate, membranous, entire, contracted at the base, with chain-like reticulations near the ribs: spike ovate, dense, of few flowers.

E. Bot. 1985.

Stems floating, slender, round, branched, with creeping roots. *Leaves* an inch and a half to two inches long, uniform, bluntnish, flat, thin, with one rib, and several reticulated veins, tapering at the base, alternate, except where the flowers are situated. *Stipulae* narrow, lanceolate, acute. *Flower-stalks* solitary from the bosom of one stipula of the opposite leaves, nearly as long as the corresponding leaf, cylindrical, equal. *Spike* short, of eight, ten, or twelve small flowers. Colour of the whole plant dark green, or brownish olive. In the fig. above cited, the peculiar chain-like reticulations close to the main rib of the leaves are omitted.

Thus is named and described in the English Botany, a plant found by the Rev. H. Davies in the lakes of North Wales. Sir J. E. Smith is of opinion that it may possibly prove to be the real *P. setaceum* of Linnaeus, as yet so imperfectly known in this country. We find in our herbarium specimens from Lynn y Cwn, a lake in North Wales, communicated by Mr. Griffith, much resembling it, but which have hitherto been esteemed a variety of *P. natans*, and when we consider the changes which these plants undergo from the greater or less quantity of water, and its stagnant or current state, we cannot but suspect the permanency of *P. lanceolatum*.

LANCEOLATE POND-WEED. Welsh: *Dyfr-llys cul-ddail*. Mountain lakes in Wales and Scotland. Loch of Linthothen, Angus-shire. Mr. G. Don. By the bridge at Bervie, Kincardineshire. Mr. Maughan. Hook. Scot. P. Aug. E.)

P. PUSIL/LUM. Leaves strap-shaped, opposite and alternate, distinct, expanding from the base: stem cylindrical: (flower-stalks axillary, mostly lateral, many times longer than their spikes. E.)

E. Bot. 215—*Vaill.* 32. 4—*Pet.* 5. 11.

(Smaller than most of its congeners. E.) Whole plant extremely slender. Stem much branched, striated, (one to two feet long. E.) Leaves very narrow, pointed, extremely expanding at the base, sometimes almost bent back. Stipule broader than the leaves, short, membranous. Spike short. Woodw. Leaves rather longer than the joints of the stem, not at all sheathing it; (with solitary, slender, lateral ribs. E.) Fruit-stalks sheathed at the base by two concave, membranous, spear-shaped scales, which Smith considers stipule, being found within the base of all the leaves, but are probably calculated to answer the purposes both of stipule and floral-leaves, as lateral fruit-stalks rise from within them. Spikes terminal, nearly globular, about three-flowered.

SMALL POND-WEED. (Welsh: *Dyfr-llys eiddil.* E.) Ponds in clayey soil. E.) P. June—Aug.

RUP'PIA.* Cal. none: Bloss. none: Seeds four, pedicellate.

R. MARIT'IMA.

(*Hook. Fl. Lond.* 50. E.)—*E. Bot.* 136—*Fl. Dan.* 364—*Mich.* 35—*Pluk.* 248. 4—*Pet.* 6. 1—*Lob. Obs.* 653. 1, and *Id.* ii. 255. 2—*Ger. Em.* 1573. 7—*Park.* 1289. 5—*Lightf.* 8. 1—*Fructif. Ray* 6. 1. at p. 168.

Flowers on each fruit-stalk, from one to four, though commonly two, one terminal, and one sessile. Stamens, germens, and seeds, four in each flower. This plant, when not in fruit, very much resembles *Potamogeton pectinatum*, var. *marinum*. Robson. (Like *Falisceria*, it lengthens or contracts its fruit-stalk according to the greater or less depth of the water. Gooden.; and, assuming a spiral form, the flowers and fruit are thus borne above the surface, sinking afterwards to deposit the seeds at the bottom. The fructification is highly curious and interesting, and beautifully illustrated in *Fl. Lond.* E.) Leaves alternate; very long and slender. Stems thread-shaped, branched, leafy. (Stigmas rarely four only, though four or six are usually most prominent. G. E. Sm. Obs. and Pl. I. E.)

TASSEL POND-WEED. SEA TASSEL-GRASS. (Welsh: *Ruppia morawl.* *Tuſin-dyfr-llys.* E.) Salt water ditches and pools. Near Yarmouth. Mr. Woodward. Cornwall. Mr. Stackhouse. Near the mouth of the Tees. Mr. Robson. (Pool near Birkenhead, opposite Liverpool. Mr. Burgess. Ditches below Wisbech. Mr. Skrimshire, in Bot. Guide. Ditches between Traeth Mawr and Pont Aberglaslyn. Bingley. Dykes near to the sea at Dimchurch, Kent. Mr. Gerard E. Smith. Anglesey. Welsh Bot. Guillon Links, Aberlady Bay. Maughan. Grev. Edin. E.) P. July—Aug.

SAGIN'NA.† Calyx four-leaved: Petals four: Caps. one-celled: four-valved, many-seeded.

* (In honour of the German physician, Henry RUPPIUS, author of "Flora Jenensis," &c. 1726. E.)

† (From *sagina*, nutriment, it being supposed fattening to sheep; though perhaps originally designating some nutritious kind of grain. E.)

S. PROCUMBENS. (Stems procumbent, smooth: petals very short. E.)

Curt.—(*E. Bot.* 880. E.)—*Kniph.* 10—*Seguier.* i. 5. 3—*Park.* 1340. 6—*Pet.* 59. 10.

Root perennial when cultivated, and in a garden it produces petals, though I could never find any in a wild state. Jacq. Two or three inches high; stems thread-like; leaves slender and minute. Blossom greenish white, (at first drooping. E.) The four valves of the capsule, after it opens, have so much the appearance of petals, that it is possible to mistake them. (Stems and leaves remaining green through the winter. E.)

PROCUMBENT PEARL-WORT. (Welsh: *Corwlyddyn gorweddawl.* E.)

Walls, roofs, sandy, and also boggy places; garden walks, paved courts, common. P. June.

(Var. 2. Flowers with five petals.

Seldom or never grows in patches. Fruit-stalks and capsules longer than in the preceding. Flowers mostly five petals and ten stamens; when they have always five styles.

On Ben Lawers, at a great height. Mr. Brown. Aug. E.)

Var. 3. *Fl. pleno.* Petals more than twenty. Observed near Beaumaris, by the Rev. Hugh Davies. E.)

(*S. MARITIMA.* Stems nearly upright, divaricated, smooth: leaves obtuse, without bristles: petals none.

Hook. Fl. Lond. 115—*E. Bot.* 2195.

Stems numerous, two or three inches high, spreading at the bottom, but otherwise erect, branched, leafy, round, smooth, often purplish. Leaves scarcely half the length of the former species, but broader in proportion, thick and blunt, often tipped with a minute point, but no bristle; combined by their membranous bases, and sometimes fringed thereabouts. Flower-stalks slender, erect, smooth, usually an inch long. Calyx-leaves broadly ovate, obtuse, with a white membranous edge. Petals abortive, or entirely wanting. Capsule rather longer than the calyx. Sm. Sometimes eight stamens. Don. Petals entirely wanting. Sm. and Hook.

It is distinguished from *S. procumbens*, with which it is frequently found mixed, by its annual roots, and nearly erect, reddish stems; from *S. apetalá* by its entirely glabrous stems; and from both by its total want of petals, awnless and obtuse leaves, and much shorter capsule. Fl. Lond.

SEA PEARL-WORT. This new species was detected in Scotland by Mr. Don, on the coast near Aberdeen, near Queen's Ferry, Isle of Skye, and also, it is said, on the summit of Ben Nevis: but was anteriorly discovered by Mr. Brown, from whom we find specimens in With. Herb. gathered on the sea-shore at Ballycastle, and also at Carn, Antrim, more than twenty years ago. Mr. Winch has recently favoured us with specimens from Hartlepool Pier, and Seaton Moor, Durham; and Professor Hooker appears to have found it in salt-marshes at Southwold, Suffolk, abundantly. May—Aug. E.)

S. APETALA. (Stem nearly upright, pubescent; leaves bristle-pointed, fringed; petals very minute, or wanting. E.)

Dicks. H. S.—*Curt.*—(*E. Bot.* 881. E.)—*Fl. Dan.* 845—*Plot. Oxf.* 9. 7. at p. 146—*Pet.* 59. 11—*Pluk.* 74.

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Leaves hairy. *Hairs* not terminated by minute globules as in *Spergularia laricina*, which it otherwise much resembles. It is a still smaller and more slender plant than the preceding, and always is hairy, whilst the other is never so. It is annual, and the other perennial. (Curt. (*Seeds* encircled with a black line. Fl. Brit. E.) *Hairs* on the stems more or less deciduous; those on the leaves permanent.

ANNUAL SMALL-FLOWERED PEARL-WORT. (Welsh: *Corwlyddyn anaf-flodeuog*. E.) On walls, gravel-walks, and other very dry places, not uncommon. A. May—June.

S. CERASTOIDES. Stem spreading, forked: leaves battledore, or inversely egg-shaped; pointed, reflexed; as are the fruit-stalks after flowering.

Dicks. H. S.—Curt.—E. Bot. 166.

A span high. *Stems* several, cylindrical. *Branches* diverging. *Leaves* opposite, in pairs, upper ones sessile. *Flowers* from the forks of the stems and branches. *Fruit-stalk* an inch long, pubescent. *Calyx* four-leaved. *Blossom* four petals, white, cloven at the end, but half the length of the calyx. *Stamens* four. *Germen* egg-shaped, as long as the stamens. *Styles* four, very short, upright. *Summits* reflexed, woolly. *Capsule* cylindrical, opening at the top, with eight teeth. Its habit that of a *Cerastium*.

MOUSE-EAR PEARL-WORT. Discovered by Mr. Dickson on the sandy shores of Inch Keith, Inch Coombe, and on the beach near Preston Pans. (Sea shore near South Shields and Sunderland, and Whitburn Sands; Links at Hartley Pans, and Holy Island, Northumberland. Mr. Winch. Between Craftthole and Looe, Devon. Rev. J. P. Jones. Sand hills, near Swansea. Mr. J. Woods, jun. On Yarmouth Denes. Mr. D. Turner, About Yoxford, Suffolk. Rev. G. Crabbe. Bot. Guide. Just above the beach on the small common near the deer park at Penmon, Anglesey. Welsh Bot. E.) A. June—July. Linn. tr. ii. 343.

Several recent Botanists have removed this plant to the genus *Cerastium*, calling it *C. tetrandrum*, after Curtis; a genus with which its general habit certainly much accords, though it appears that all wild specimens exhibit blossoms four-cleft, and with only four stamens; so that the discrepancies are not thus to be reconciled. E.)

(MOENCHIA.* *Calyx* four-leaved: *Petals* four: *Caps.* one-celled, one-valved, with eight teeth. E.)

(M. ERECTA.

Dicks. H. S.—E. Bot. 609—*Curt.—Ray* 15. 4. p. 348—*Vaill.* 3. 2—*Pet.* 59. 9.

Whole *herb* glaucous, very smooth. *Stems* several, erect, three or four inches high, cylindrical, leafy. *Leaves* opposite, sessile, linear-lanceolate, entire, single-ribbed. *Flowers* erect, solitary, on long terminal stalks, conspicuous for the shining white of their *petals*; and the edges of their *calyx-leaves*. *Caps.* of a light shining brown. Sm.

* (After Conrad MOENCH, Professor of Botany at Hesse Cassel, and author of "Flora Hassiaca." E.)

TETRANDRIA. TETRAGYNIA. RADIOLA. 263

UPRIGHT MOENCHIA. Welsh: *Corwlyddyn syth*. *M. erecta*. Sm.
M. glauca. Pers. Hook. *M. quaternella*. Ehrh. *Sagina erecta*. Linn.
Huds. With. Curt. Dicks. Willd. E. Bot. Gravelly soil, on pastures
and heathy ground. A. May. E.)

(RADIOLA.* *Petals* four: *Caps.* eight-celled, eight-valved:
Calyx many-cleft. E.)

(R. MILLEGRA'NA.

Dicks. H. S.—E. Bot. 893—*Fl. Dan.* 178—*Kniph.* 8—*Vaill.* 4. 6—*Ray*
15. 3. at p. 348—*Pet.* 59. 12—*Mich.* 31—*Ger. Em.* 569. 2.

Plant minute, only one to two inches high. *Stem* repeatedly dichotomous,
leafy, cylindrical, smooth. *Leaves* opposite, sessile, distant, ovate, very
entire, three-ribbed, smooth. *Flowers* axillary, and from the extreme
branches, on fruit-stalks, solitary, upright, small. *Petals* four, white,
alternate with the principal segments of the calyx.

THYME-LEAVED ALL-SEED OR FLAX-SEED. *R. millegrana*. Sm. Hook.
R. linoides. Gmel. *Linum radiola*. Linn. With. Dicks. Willd. Moist
sandy heaths. A. Aug. E.)

* (So named by Dillenius, because the cells of the ripe capsule diverge like the rays of
a little wheel. E.)

CLASS V.

PENTANDRIA.*

MONOGYNIA.

- (1) *Flowers of one petal ; beneath ; and four naked seeds.*
ROUGH-LEAVED. (ASPERIFOLIÆ.)

E'CHIUM. *Bloss.* mouth naked ; irregular ; bell-shaped.

PULMONA'RIA. *Bloss.* mouth naked ; funnel-shaped : *Cal* prism-shaped.

LITHOSPER'MUM. *Bloss.* mouth naked ; funnel-shaped :
Cal. with five divisions.

SYMPHYTUM. *Bloss.* mouth toothed ; ventricose.

BORA'GO. *Bloss.* mouth toothed ; wheel-shaped.

LYCOP'SIS. *Bloss.* mouth closed ; funnel-shaped ; tube crooked.

ASPERU'GO. *Bloss.* mouth closed ; briefly funnel-shaped :
Fruit compressed.

CYNOGLOS'SUM. *Bloss.* mouth closed ; funnel-shaped :
Seeds depressed ; (attached laterally to a central column. E.)

* (As several plants of this Class are powerfully deleterious, it may be here stated, that the most prudent and effectual domestic treatment to arrest the progress of vegetable poison, (where medical aid or the use of the *stomach pump* cannot be promptly obtained), is to excite vomiting by repeated doses of salad or sweet oil, or flour of mustard, with warm water, followed by a moderate quantity of vinegar or lemon-juice, and purgatives. Some valuable remarks on this important subject, with a perspicuous tabular view of vegetable poisons, their symptoms and treatment, will be found in the Popular Lectures of W. Lempriere, M.D. 8vo. 1827. It is a curious fact, lately ascertained by M. Moret, that these poisons prove equally destructive of vegetable, as of animal life. Bean plants, which will continue to live several days in spring water, were quickly killed by the infusion of a few grains of opium in an ounce of water in which they were immersed. Hemlock produced similar effects ; and six grains of powdered Fox-glove, in an ounce of water, exhibited its deleterious effects by wrinkling the leaves of the plants in a few minutes, and destroying them in twenty-four hours. E.)

ANCHU'SA. *Bloss.* mouth closed; funnel-shaped; tube prism-shaped at the bottom.

MYOSOTIS. *Bloss.* mouth closed; salver-shaped; lobes notched at the end.

(2) *Flowers of one petal; beneath. Seeds in a vessel.*

ANAGALLIS. *Caps.* one-celled; cut round; *Bloss.* wheel-shaped; (*Stam.* hairy. E.)

LYSIMACHIA. *Caps.* one-celled; ten-valved; *Bloss.* wheel-shaped; *Summit* blunt.

CYCLAMEN. *Caps.* one-celled; pulpy within; *Bloss.* reflexed; *Summit* acute.

PRIMULA. *Caps.* one-celled; *Bloss.* funnel-shaped; mouth open; *Summit* globular.

HOTTONIA. *Caps.* one-celled; *Bloss.* tube below the stamens; *Summit* globular.

MENYANTHES. *Caps.* one-celled; *Bloss.* shaggy; *Summit* cloven.

CONVOLVULUS. *Caps.* two-celled; two seeds; *Bloss.* bell-shaped; *Summit* cloven.

DATURA. *Caps.* two-celled; four-valved; *Bloss.* funnel-shaped, *Cal.* deciduous.

HYOSCYAMUS. *Caps.* two-celled; covered with a lid; *Bloss.* funnel-shaped; *Summit* globular.

VERBASCUM. *Caps.* two-celled; *Bloss.* wheel-shaped; *Stamens* declipping; *Summit* blunt.

(ERYTHRÆA. *Caps.* of two incomplete cells; *Bloss.* salver-shaped; *Anth.* finally spiral. E.)

LOBELIA. *Caps.* two or three-celled; *Bloss.* irregular; *Cal.* five-cleft; *Anthers* somewhat united.

POLEMONIUM. *Caps.* three-celled; *Bloss.* with five divisions; *Stam.* inserted on the valves.

AZALEA. *Caps.* five-celled; *Bloss.* bell-shaped; *Summit* blunt.

VINCA. *S. Vess.* two upright follicles; *Bloss.* salver-shaped; *Seeds* simple.

SOLANUM. *Berry* two-celled; *Anther* with two pores at the top.

ATROPA. *Berry* two-celled : *Stamens* distant, incurved.

[*Gentiana centaurium*.]

(3) *Flowers of one petal ; superior. Seeds in a vessel.*

SAM'OLUS. *Caps.* one-celled ; five-valved at the top : *Bloss.* salver-shaped : *Summit* globular.

PHYTEU'MA. *Caps.* two or three-celled ; perforated : *Bloss.* with five divisions.

CAMPAN'ULA. *Caps.* three or five-celled : perforated : *Bloss.* bell-shaped : *Summit* three-cleft.

LONICE'RA. *Berry* two-celled ; roundish : *Bloss.* irregular : *Summit* globular.

[*Viburnum lantana.* *Rubia*.]

(4) *Flowers of five petals ; beneath the germen.*

RHAM'NUS. *Berry* three-celled ; roundish : *Cal.* tubular, resembling a blossom, with five converging scales at the mouth.

EUON'YMUS. *Berry* like a capsule ; lobed : *Cal.* flat : *Seeds* in a pulpy, berry-like covering.

IMPA'TIENS. *Caps.* five-celled ; five-valved : *Bloss.* irregular : *Nectary* one-leaf ; hood-like : *Stamens* adhering together : *Cal.* two leaves.

VIOLA. *Caps.* one-celled ; three-valved : *Bloss.* irregular ; with a spur behind : *Anthers* adhering together : *Cal.* five leaves.

(5) *Flowers of five petals ; above the germen.*

RI'BES. *Berry* many-seeded : *Cal.* bearing the blossom : *Style* cloven.

HED'ERA. *Berry* five-seeded ; clasped by the calyx : *Summit* simple.

JASIO'NE. *Caps.* (imperfectly, *E.*) two-celled : *Bloss.* regular : *Anthers* adhering together : *Cal.* common, ten-leaved.

(6) *Flowers incomplete ; beneath the germen.*

ILLE'CEBRUM. *Caps.* one-seeded ; five-valved : *Cal.* simple ; cartilaginous.

GLAUX. *Caps.* five-seeded ; five-valved : *Cal.* simple ; coloured ; bell-shaped.

[*Salix pentandra.* *Polygonum amphibium.* *Atriplex.* *Salsola.* *Chenopodium maritimum.*]

(7) *Flowers incomplete ; superior.*

THE'SIUM. *Seed* one ; corticated, inferior : *Cal.* bearing the stamens.

DIGYNIA.

(1) *Flowers incomplete.*

XANTHIUM. Barren and fertile flowers on the same plant.

B. *Cal.* common ; tiled : *Bloss.* one petal ; five-cleft ; funnel-shaped : *Recept.* chaffy.

F. *Cal.* involucre ; two-leaved ; two-flowered : *Bloss.* none : *Drupa* juiceless ; prickly ; bifid : *Nut* two-celled.

UL'MUS. *Caps.* one-celled, one-seeded, membranous, bordered, orbicular, compressed.

HU'MULUS. *Seed* one ; coated by a leafy calyx : Flowers, barren and fertile on different plants.

B. *Cal.* five-leaved.

F. *Cal.* one leaf ; entire ; opening obliquely.

A'TRIPLEX. *Seed* one ; compressed ; Fertile flowers on the same plant.

United Fl. Cal. five-leaved.

Fert. Fl. Cal. two-leaved.

CHENOPO'DIUM. *Seed* lenticular : *Cal.* with five divisions ; segments concave.

BETA. *Seed* one ; kidney-shaped ; imbedded in the fleshy base of the calyx.

HERNIA'RIA. *Seed* one ; egg-shaped ; covered : *Cal.* with five divisions : *Filaments* five sterile.

SAL'SOLA. *Seed* one ; convoluted as a snail shell ; inclosed in a capsule imbedded in the fleshy calyx.

[*Polygonum amphibium.* *Staphylea pinnata.* *Scleranthus annuus* and *perennis.* *Quercus.* *Cuscuta europæa.*

(2) *Flowers of one petal ; beneath the germen.*

SWERT'IA. *Caps.* one-celled ; two-valved : *Bloss.* wheel-

shaped ; (with five nectariferous pores at the base of each segment. E.)

GENTIANA. *Caps.* one-celled ; two-valved : *Bloss.* tubular at the base, without nectariferous pores : *Receptacles* of the seeds two.

[*Cuscuta.*]

(3) *Flowers of five petals, beneath.*

[*Staphylea pinnata.*]

(4) *Flowers of five petals, mostly of two seeds.*

UMBELLIFEROUS. (**UMBELLATE.**)*

A. *Involucrum* general and partial.

ERYNGIUM. *Flowers* forming a head : *Recept.* chaffy : (*Seeds* bristly. E.)

HYDROCOYLE. *Flowers* in a simple umbel ; fertile : *Seeds* compressed : (*Pet.* entire. E.)

SANICULA. *Flowers* in a capitate umbel ; central ones abortive : *Seeds* prickly.

HERACLEUM. *Flowers* radiate ; some barren : *Invol.* deciduous : *Seeds* membranous, (with three obtuse ribs on the back. E.)

CENANTHE. *Flowers* radiate ; outer ones barren : *Invol.* simple : *Seeds* with a suberose coat, crowned, sessile.

CAUCALIS. *Flowers* radiate ; central ones barren : *Invol.* simple : (*Seeds* with four rows of hooked prickles, the instertices rough. E.)

(**TORILIS.** *Invol.* sometimes obsolete. *Flowers* equal. *Fruit* ovate, ribbed, every where clothed with bristles. Grev. E.)

DAUCUS. *Flowers* radiate ; central ones barren : *Invol.* pinnatifid : *Seed* with muricated ribs and bristles between.

TORDYLIUM. *Flowers* radiate ; all fertile : *Invol.* simple *Seeds* scoloped at the edge.

PEUCEDANUM. *Flowers* uniform ; central ones barren : *Invol.* simple : *Seeds* depressed ; striated, bordered.

* (The different umbelliferous plants afford shelter and nourishment to various insects, especially to *Papilio Machaon*, the superb swallow-tailed butterfly, whose larva feeds on them ; *Mordella abdominalis*, *Oedemera Podagrariae*, *Molophilus dimidiatus*, and *Leptura meridiana*. E.)

(CNI'DIUM. *Fruit* ovate, acute, with equidistant, very sharp ribs; interstices deep, concave; juncture contracted. *Cal.* none. *Pet.* equal, obovate, or inversely heart-shaped: *Styles* hemispherical at the base; subsequently elongated, spreading, cylindrical: *Fl. Recept.* annular, thin, undulated, erect; afterwards depressed. *Fl.* imperfectly separated, nearly regular. Sm. E.)

CO'NIUM. *Flowers* uniform; all fertile: *Partial Invol.* extending but half-way round: *Petals* heart-shaped: *Seeds* gibbous, ribbed and furrowed.

BUN'IUM. *Flowers* uniform; all fertile: *Partial Invol.* like bristles: *Petals* heart-shaped.

ATHAMAN'TA. *Flowers* uniform; all fertile: *Petals* heart-shaped: *Seeds* convex; striated.

BUPLEU'RUM. *Flowers* uniform; all fertile: *Partial Invol.* resembling the petal: *Petals* rolled inwards.

SI'UM. *Flowers* uniform: all fertile: *Petals* heart-shaped: *Seeds* nearly egg-shaped; striated.

SELI'NUM. *Flowers* uniform; all fertile: *Petals* heart-shaped: *Seeds* compressed; striated.

CRITH'MUM. *Flowers* uniform; all fertile: *Invol.* horizontal: (*Petals* broad at the base. E.)

LIGUSTICUM. *Flowers* uniform; all fertile: *Invol.* membranous: *Petals* rolled inward: (*Cal.* quinque dentate, small. E.)

ANGEL'ICA. *Flowers* uniform; all fertile: *Umbellules* globular: *Petals* nearly flat: (*Seed* hemispherical, three-winged. E.)

SI'SON. *Flowers* uniform; all fertile: *Umbel.* of few spokes: *Petals* nearly flat.

B. *Involucrum* only partial.

CORIAN'DRUM. *Flowers* radiate; central ones barren: *Fruit* globular.

SCAN'DIX. *Flowers* radiate; central ones barren: *Fruit* oblong.

(ANTHRIS'CUS. *Involucrum* rarely present: *Fruit* ovate, muricate or hispid, with a short glabrous beak: *Styles* persistent. Grev. E.)

ÆTHU'SA. *Flowers* somewhat radiate; all fertile: *Partial Invol.* extending but half way round: *Fruit* deeply furrowed.

IMPERATO'RIA. *Flowers* uniform; all fertile: *Umbel.* spreading; flat.

CICU'TA. *Flowers* uniform; all fertile: *Petals* flat: *Fruit* furrowed.

CHÆROPHYL'LUM. (*Beak* shorter than the seeds, angular. *Fruit* without ribs. Sm. E.) *Flowers* uniform; central ones barren: *Partial Invol.* of five reflexed leaves.

(MYR'RHIS. *Fr.* deeply furrowed: *Cal.* none: *Pet.* inversely heart-shaped, rather unequal: *Fl. Recept.* none: *Flowers* imperfectly separated. Sm. E.)

[*Bupleurum rotundifolium.* *Pimpinella.* *Heracleum sphondylium.* *Oenanthe crocata.* *Caucalis leptophylla.* *Angelica sylvestris.* *Bunium.*]

C. Involucrum none; neither general nor partial.

SMYR'NIUM. *Flowers* uniform; central ones barren: *Seeds* kidney-shaped; angular.

(ME'UM. *Fr.* elliptic-oblong, with equi-distant ribs; interstices flattish: *Cal.* none: *Pet.* ob-ovate, with an inflexed point, equal: *Styles* tumid at the base, short, recurved: *Fl. Recept.* none: *Fl.* united, all perfect, regular. Sm. E.)

CA'RUM. *Flowers* uniform; central ones barren: *Seeds* gibbous, (three-ribbed on the back: ribs obtuse, the intermediate spaces sulcate and striate. Grev. E.)

PASTINA'CA. *Flowers* uniform, all fertile: *Seeds* depressed and flat.

ÆGOPO'DIUM. *Flowers* uniform; all fertile: *Seeds* gibbous, striated: *Petals* heart-shaped.

A'PIUM. *Flowers* uniform; almost all fertile: *Petals* incurved: *Seeds* minute; striated.

PIMPINEL'LA. *Flowers* uniform; (perfect, or dioecious. Sm. E.) *Umbels* before flowering, pendulous. *Petals* heart-shaped.

(Genera of UMBELLATÆ characterized by the parts of *fructification* alone, as proposed by Sir J. E. Smith.

Flowers of five petals, superior : Seeds two.

A. Fruit a single or double globe.

CORIAN'DRUM. *Fruit* a single or double globe, smooth, without ribs : *Cal.* broad, unequal : *Pet.* radiant : *Floral Recept.* none.

B. Fruit beaked.

SCAN'DIX. *Beak* much longer than the seeds : *Fruit* somewhat bristly : *Cal.* none : *Pet.* unequal, undivided : *Fl. Recept.* five-lobed coloured.

ANTHRIS'CUS. *Beak* shorter than the seeds, even : *Fr.* rough with scattered prominent bristles : *Cal.* none : *Pet.* equal, inversely heart-shaped : *Fl. Recept.* slightly bordered.

CHEROPHYLLUM. *Beak* shorter than the seeds, angular : *Fr.* smooth, without ribs : *Cal.* none : *Pet.* inversely heart-shaped, rather unequal : *Fl. Recept.* wavy.

C. Fruit solid, prickly, without a beak.

ERYN'GIUM. *Fr.* ovate, clothed with straight bristles : *Cal.* pointed : *Pet.* oblong, equal, inflexed, undivided : *Fl.* aggregate : *Com. Recept.* scaly.

SANIC'ULA. *Fr.* ovate, clothed with hooked bristles : *Cal.* acute : *Pet.* lanceolate, inflexed, nearly equal : *Fl.* separated, dissimilar.

DAU'CUS. *Fr.* elliptic-oblong, compressed transversely : *Seeds* with four rows of flat prickles, and rough intermediate ribs : *Cal.* obsolete : *Pet.* inversely heart-shaped, unequal : *Fl.* separated.

CAU'CALIS. *Fr.* elliptic-oblong, compressed transversely : *Seeds* with four rows of ascending, oval-shaped, hooked prickles, the interstices prickly, or rough : *Cal.* broad, acute, unequal : *Pet.* inversely heart-shaped, unequal : *Fl.* imperfectly separated.

TORILIS. *Fr.* ovate, slightly compressed laterally : *Seeds* ribless, rough, with scattered, prominent, ascending, rigid prickles : *Cal.* short, broad, acute, nearly equal : *Pet.* inversely heart-shaped, nearly equal : *Fl.* united.

D. Fruit solid, nearly round, unarmed, without wings.

MYRRHIS. *Fr.* deeply furrowed : *Cal.* none : *Pet.* inversely heart-shaped, rather unequal : *Fl. Recept.* none : *Fl.* imperfectly separated.

BU'NIUM. *Fr.* slightly ribbed : *Cal.* small, acute, unequal : *Pet.* inversely heart-shaped, equal : *Fl. Recept.* none : *Fl.* imperfectly separated.

CENAN'THE. *Fr.* ribbed, somewhat spongy : *Cal.* large, lanceolate, acute, spreading, unequal : *Pet.* inversely heart-shaped, radiant, very unequal : *Fl. Recept.* dilated, depressed : *Fl.* separated.

CRITH'MUM. *Fl.* ribbed, coriaceous: *Cal.* small, broad, acute, incurved: *Pet.* elliptical, acute, incurved, equal: *Fl. Recept.* none: *Fl.* united, all perfect.

ATHAMAN'TA. *Fl.* ribbed, ovate, hairy: *Styles* short: *Cal.* lanceolate: acute, incurved: *Pet.* inversely heart-shaped, broadly pointed, equal: *Fl. Recept.* none: *Fl.* imperfectly separated.

PIMPINEL'LA. *Fr.* ovate, ribbed, with convex interstices: *Styles* capillary, as long as the fruit: *Cal.* none: *Pet.* inversely heart-shaped, nearly equal: *Fl. Recept.* none: *Fl.* either united or dioecious.

E. Fruit solid, unarmed, without wings, compressed laterally, its transverse diameter being at least twice the breadth of the juncture.

SI'UM. *Fr.* ovate, or orbicular, ribbed, furrowed: *Cal.* small, acute, unequal, or obsolete: *Pet.* inversely heart-shaped, or ob-ovate, equal: *Styles* cylindrical, shorter than the petals: *Fl. Recept.* none: *Fl.* uniform, united.

SI'SON. *Fr.* ovate, or nearly orbicular, ribbed: *Cal.* obsolete or blunt: *Pet.* elliptical, or inversely heart-shaped, with an involute point, equal: *Styles* very short and thick: *Fl. Recept.* none: *Fl.* uniform, united.

CICU'TA. *Fr.* nearly orbicular, heart-shaped at the base, with six double ribs: *Cal.* broad, acute, rather unequal: *Pet.* ovate, or slightly heart-shaped, nearly equal: *Styles* scarcely tumid at the base: *Fl. Recept.* depressed, withering: *Fl.* uniform, nearly regular, united.

CO'NIUM. *Fr.* ovate, with ten acute ribs, wavy in an unripe state: *Cal.* obsolete: *Pet.* inversely heart-shaped, slightly unequal: *Styles* a little tumid at the base: *Fl. Recept.* dilated, depressed, wavy, permanent: *Fl.* slightly irregular, united.

SMYR'NIUM. *Fr.* broader than long, concave at each side, with six acute dorsal ribs; interstices convex: *Cal.* very small, acute: *Pet.* equal, lanceolate, incurved; or inversely heart-shaped: *Styles* tumid, and depressed at the base: *Fl. Recept.* none: *Fl.* nearly regular, partly barren or abortive.

A'PIUM. *Fr.* roundish-ovate, with six acute dorsal ribs; interstices flat: *Cal.* obsolete: *Pet.* roundish, with an inflexed point, very nearly equal: *Styles* greatly swelled at the base: *Fl. Recept.* thin, orbicular, wavy: *Fl.* nearly regular, united.

ÆGOF'ODIUM. *Fr.* elliptic-oblong, with equidistant ribs; interstices flattish: *Cal.* none: *Pet.* inversely heart-shaped, broad, a little unequal: *Styles* ovate at the base: *Fl. Recept.* none: *Fl.* united, all perfect; slightly radiant.

ME'UM. *Fr.* elliptic-oblong, with equidistant ribs; interstices flattish: *Cal.* none: *Pet.* obovate, with an inflexed point, equal: *Styles* tumid at the base, short, recurved: *Fl. Recept.* none: *Fl.* united, all perfect, regular.

CARUM. *Fr.* elliptic-oblong, with equidistant ribs ; interstices convex : *Cal.* minute, acute, often obsolete : *Pet.* inversely heart-shaped, unequal : *Styles* tumid at the base ; subsequently elongated, widely spreading : *Fl. Recept.* annular, thin, wavy, permanent : *Fl.* separated, irregular.

CINID'UM. *Fr.* ovate, acute, with equidistant, very sharp ribs ; interstices deep, concave ; juncture contracted : *Cal.* none : *Pet.* equal, ob-ovate, or inversely heart-shaped : *Styles* hemispherical at the base ; subsequently elongated, spreading, cylindrical : *Fl. Recept.* annular, thin, undulated, erect ; afterwards depressed : *Fl.* imperfectly separated, nearly regular.

BUPLEURUM. *Fr.* ovate-oblong, obtuse, with prominent, acute, abrupt ribs ; interstices flat ; juncture contracted : *Cal.* none : *Pet.* equal, broadish-wedge-shaped, very short, involute : *Styles* very short, not extending beyond the circumference of their broad, tumid bases : *Fl. Recept.* none : *Fl.* all perfect and regular.

HYDROCO'YLE. *Fl.* nearly orbicular, rather broader than long, angular, much compressed ; juncture very narrow : *Cal.* none : *Pet.* equal, ovate, spreading, undivided : *Styles* cylindrical, shorter than the stamens ; tumid at the base : *Fl. Recept.* none : *Fl.* all perfect and regular.

F. Fruit solid, unarmed, compressed transversely, the juncture being broader than the transverse diameter.

ETHU'SA. *Seeds* ovate, convex, with five tumid, rounded, acutely-keeled ribs ; interstices deep, acute-angular ; border none : *Cal.* pointed, very minute : *Pet.* inversely heart-shaped, rather irregular : *Fl. Recept.* none : *Fl.* all perfect, slightly radiant.

IMPERATO'RIA. *Seeds* orbicular, with a notch at each end, a little convex, with three prominent dorsal ribs, and a dilated, flat, even border : *Cal.* none : *Pet.* inversely heart-shaped, very slightly irregular : *Fl. Recept.* none : *Fl.* all perfect, scarcely radiant.

SELI'NUM. *Seeds* elliptical, slightly convex, with three acute dorsal ribs, and a dilated, flat, even border : *Cal.* minute, pointed, spreading : *Pet.* inversely heart-shaped, involute equal : *Fl. Recept.* obsolete : *Fl.* perfect, regular, a few occasionally abortive.

ANGEL'ICA. *Seeds* elliptic-oblong, convex, with three dorsal wings, and a narrow, flat, even border : *Cal.* none : *Pet.* lanceolate, flattish, undivided, contracted at each end, equal : *Fl. Recept.* thin, wavy, narrow, permanent : *Fl.* all perfect, regular.

LIGUS'TICUM. *Seeds* oblong, convex, with three dorsal, and two marginal, equal wings : *Cal.* small, pointed, erect ; broad at the base : *Pet.* elliptical, flattish, undivided, contracted at each end, equal : *Fl. Recept.* none : *Fl.* all perfect, regular.

G. Fruit thin and almost flat, compressed transversely, without dorsal wings.

PEUCED'ANUM. *Seeds* broadly elliptical, with a notch at each end, a little convex, with three slightly prominent ribs; interstices striated; border narrow, flat, even, smooth, and entire: *Cal.* pointed, ascending: *Pet.* inversely heart-shaped, all very nearly equal: *Fl. Recept.* none: *Fl.* regular, imperfectly separated.

PASTINA'CA. *Seeds* elliptic-obovate, with a slight notch at the summit, very nearly flat, with three dorsal ribs and two marginal ones; border narrow, flat, thin, even, smooth, and entire: *Cal.* very minute, obsolete: *Pet.* broadly lanceolate, involute, equal: *Fl. Recept.* broad, orbicular, wavy, rather thin, concealing the calyx: *Fl.* regular, uniform, perfect.

HERAC'LEUM. *Seeds* inversely heart-shaped, with a notch at the summit, very nearly flat, with three slender dorsal ribs, two distant marginal ones, and four intermediate, coloured, depressed, abrupt lines from the top; border narrow, slightly tumid, smooth, even and entire: *Cal.* of five small, acute, evanescent teeth: *Pet.* inversely heart-shaped, radiant: *Fl. Recept.* wavy, crenate, obtuse: *Fl.* separated.

TORDYL'IUM. *Seeds* orbicular, nearly flat, roughish, without ribs; border tumid, wrinkled or crenate, naked or bristly: *Cal.* of five awl-shaped, unequal teeth: *Pet.* inversely heart-shaped, radiant, variously unequal and irregular: *Fl. Recept.* none: *Fl.* separated. E.)

TRIGYNIA.

(1) *Flowers above the germen.*

VIBUR'NUM. *Bloss.* five-cleft: *Berry* one-seeded.

SAMBU'CUS. *Bloss.* five-cleft: *Berry* three-seeded.

(2) *Flowers beneath the germen.*

CORRIGI'OLA. *Bloss.* five-petals: *Cal.* with five divisions: *Seed* one, triangular.

STAPHYLE'A. *Caps.* with two or three-clefts; inflated: *Bloss.* five petals.

TAM'ARIX. *Caps.* one-celled: *Seed* crowned with a downy feather; *Bloss.* five petals.

[*Montia fontana*, *Aronaria rubra* and *marina*. *Salsola fructicosa* and *Kali*. *Holosteum umbellatum*. *Chenopodium maritimum*. *Quercus*.]

TETRAGYNIA.

PARNAS'SIA. *Bloss.* five petals : *Nectaries* five ; fringed with pedicellate glands : *Caps.* four-valved.
[*Ilex aquifolium.* *Quercus.*]

PENTAGYNIA.

LI'NUM. *Bloss.* five petals : *Caps.* ten-celled ; one seed in each cell.

SIBBALD'IA. *Bloss.* five petals : *Cal.* ten-cleft : *Seeds* five, naked.

STATICE. *Bloss.* with five divisions : *Seed* one, (covered by the permanent calyx. E.)

[*Cerastium semidecandrum.* *Spergula pentandra.* *Geranium.* *Sagina procumbens.* *Quercus.*]

HEXAGYNIA.

DRO'SERA. (*Pet.* five : *Caps.* three-valved ; many-seeded. E.)

POLYGYNIA.

MYOSU'RUS. (*Pet.* five, with nectariferous tubular claws : *Seeds* naked : *Cal.* of five leaves, each spurred at the base. E.)

[*Ranunculus hederaceus.*]

MONOGYNIA.

MYOSO'TIS.* *Blossom* salver-shaped, five-cleft, lobes notched : *mouth* closed with projecting scales : *nuts* four, imperforate.

(1) (*Roots perennial.* E.)

M. PALUS'TRIS. (*Seeds* smooth : leaves and calyx rough, with short,

* (From *μῦς* a mouse, and *ωτός* an ear ; alluding to the soft and erect smaller leaves. E.)

mostly appressed hairs : * racemes leafless : peduncles (in fruit) divergent, twice as long as the funnel-shaped, five-cleft, patent calyx ; limb of the blossom horizontally expanded, longer than the tube : root creeping. E.)

Curt. 165—(*E. Bot.* 1773. E.)—*Kniph.* 11. *M. palustris*—*E. Bot.* 486, the uncoloured figure—*Ger. Em.* 337. 3—*Park.* 691. 8—*H. Oc.* xi. 31. row 2. 4.

Plant bright green, from six to twelve or eighteen inches high. (*Root* very long, blackish, with tufts of fibres. *Stems* branching, leafy. *Leaves* egg-oblong, sessile, one and a half to two inches long. E.) *Flowers* in a long spike-like bunch, twisted spirally at the top, gradually unrolling. *Blossom* large, fine blue enamel, valves forming a bright yellow eye, convex above, and covering the anthers which are in the hollow underneath. (The buds, just before opening, are of a pink hue, which, immediately after the flowers are opened, changes to blue. *Bart.* The calyx, with its short, but expanded teeth, when in fruit, and its appressed hairs, distinguishes this species. *Hook.* E.)

MARSH MOUSE-EAR SCORPION-GRASS. FORGET-ME-NOT. (Irish : *Billar Ika.* *Coharagh.* Welsh : *Ysgorpionlllys y gors.* E.) *M. scorpioides palustris.* *Linn.* *M. scorpioides* *δ.* *Fl. Brit.* (*M. palustris.* *Sm.* *Hook. Lehm.* E.) Wet ditches, springs, rivulets, and marshes, common.

P. May—Aug.†

(*M. CÆSPITOSA.* Seeds smooth : leaves and calyx besprinkled with erect bristles : clusters leafy at the base : calyx funnel-shaped,

* (Dr. Roth considers the *direction* of the hairs an infallible test for discriminating the species of *Myosotis* hitherto confounded under *scorpioides*. There is some reason to apprehend that this distinction vanishes in the garden ; and even were it absolutely invariable, we much question the propriety, or utility of separating, on grounds so trivial, plants presenting to all common observation a precisely similar appearance. E.)

† (The union of sentiment with agreeable objects must ever render them doubly interesting. The little enamelled flower above described has for many centuries been recognized throughout civilized Europe as the emblem of lasting friendship or affection : and when such "*Fleur de Souvenance*" happens, as in the present instance, to be connected with a romantic tradition, it cannot but become prominent among those

———— " *token flowers* that tell

What words can never speak so well." *Byron.*

From *Mills's History of Chivalry* we learn, that on occasion of a joust between the Bastard of Burgundy and the Lord Scales, (brother to the Queen of Edward IV.) on the 17th April, 1465, the Ladies of the Court "in a mood of harmless merriment," attached a collar of gold enamelled with these brilliant little flowers, to the thigh of the right worshipful and amorous English knight, "for an emprise of arms on horseback and on foot." This historical fact stamps an early era of distinction, but the original derivation of the sentiment is of far more remote antiquity, and stands briefly thus recorded : Two lovers were loitering on the margin of a lake on a fine summer evening, when the maiden espied an attractive cluster of these floral gems growing close to the water on the bank of an island. She expressed a desire to possess them, when her knight plunged into the lake, and, swimming to the spot, gathered the wished-for plant ; but his strength proving unequal to the full accomplishment of his purpose, and feeling that he could not regain the shore, though very near to it, he threw the flower upon the bank, and casting an affectionate glance upon the object his soul held most dear, with the exclamation "*Forget me not,*" sunk to rise no more.

" Pour exprimer l'amour, ces fleurs semblent éclore ;
Leur langage est un mot—mais il est plein d'appas !
Délis la main des amans elles disent encor :
Aimez moi, ne m'oubliez pas." E.)

with broad spreading teeth: limb of the blossom the length of the tube: root fibrous.

Stems numerous, a foot high, crowded, erect, much branched, leafy, and many-flowered. Whole *herb* of a weaker, paler, more lax habit than the foregoing, having always a leaf or two at the base of each *cluster*. *Flowers* smaller, paler, and far less conspicuous. *Calyx* rather more deeply five-cleft, with fewer, more dispersed and lax bristles. The plant remains unchanged by cultivation, and is doubtless a very distinct species.

TUFTED WATER SCORPION-GRASS. *M. caespitosa*. Schulz. Reichenbach. In watery places. Near Tunbridge. Binfield, Berks. Mr. T. F. Forster. P. May—June. Sm. Eng. Fl. E.)

(*M. INTERMEDIA*. Seeds smooth: leaves hairy: clusters leafless: tube of the calyx clothed with hooked bristles: segments with straight upright hairs: root creeping: stems decumbent.

Fl. Dan. 583, largest figure.

Herb of a dull green, copiously clothed with lax spreading hairs. *Stems* several, very hairy, leafy, more or less branched, from four to ten inches high. *Leaves* oblong; the lowermost often obovate, and tapering at the base. *Clusters* in pairs or solitary, on terminal, upright stalks. *Hairs* on the general and partial stalks erect, but not closely pressed. *Partial-stalks*, when in fruit, longer than the calyx, spreading not quite horizontally. *Calyx* bell-shaped in the lower half, and plentifully clothed with spreading, partly brownish, hooked bristles; in the upper half deeply five-cleft; the lanceolate converging segments covered with straight, erect, silvery hairs. *Bloss.* bright blue, almost equal in size and beauty to that of *M. palustris*.

TRAILING HAIRY SCORPION-GRASS. *M. intermedia*. Link. Reichenbach. In dry shady places. In a small wood at Edgefield, near Holt, Norfolk, in a perfectly dry situation. Rev. R. B. Francis. On hedge banks, near Norwich, towards Keswick. Mr. J. Backhouse. P. April—May. Sm. Eng. Fl. E.)

(*M. SYLVATICA*. Seeds smooth: leaves hairy: clusters with a leaf at the base: tube of the calyx clothed with hooked bristles: segments with straight upright hairs: root fibrous: stems erect. Sm.

Dill. in R. Syn. t. 9. f. 2.

Stems about one foot high, with soft spreading hairs. *Pedicels* short in flower, then elongated and patent, at length erecto-patent, twice as long as the *calyx*. *Flowers* large, pale blue, but not equal to those of *M. palustris*. Hook.

WOOD SCORPION-GRASS. *M. sylvatica*. Lehm. *M. scorpioides* γ. Fl. Brit. In woods and dry shady places, frequent. P. June—July. E.)

(*M. ALPES'TRIS*. Seeds smooth: leaves hairy, radical ones but half the length of their foot-stalks: clusters forked at the base, leafless: calyx deeply five-cleft, clothed with upright hairs; the lowermost incurved: root fibrous, tufted. Sm.

• *Hook. Fl. Lond.* 145—*E. Bot.* 2559—*Barr. Ic.* 404.

Stems four to six inches high, with patent hairs. *Flowers* so compact as to be almost capitate, afterwards lengthened into racemes. *Pedicels* after flowering erect, in fruit patent, a little longer than the calyx. *Flowers* large, very bright blue; Hook. as ornamental as in *M. palustris*, (from which none can be more distinct), pale pink in the bud, valves white. Sm.

Professor Hooker further observes, that the alpine situations and general habit point out this plant as distinct. "There is a striking resemblance between it and *M. sylvatica* of Lehmann and Hook. Fl. Scot., but the shortness and denseness of the raceme in *M. alpestris*, approaching even to the appearance of a corymb, and the greater size of the flowers which compose it, though belonging to an individual of more diminutive stature than *M. sylvatica*, indicate a considerable difference."

ROCK SCORPION-GRASS. *M. alpestris*. Lehm. *M. rupicola*. E. Bot. On the higher mountains of Scotland, not uncommon. Mr. G. Don. Ben Lawers, near the summit, plentiful. Schehallion, and others of the Breadalbane range. Hooker. P. July—Aug. E.)

(2) (*Roots annual*. E.)

M. ARVEN'SIS. (Seeds smooth: leaves hairy, oblongo-lanceolate, radical ones but half the length of their foot-stalks: racemes forked at the base, leafless: calyx deeply five-cleft, clothed with upright hairs, the lowermost incurved: root fibrous, tufted. Sm. E.)

(E. Bot. 480. E.) Kniph. 11. *M. arvensis*—Ray Syn. 9. 2. at p. 128—Dod. 72—Lob. Obs. 245. 4—Ger. Em. 337. 4—Park. 691. 7—H. Ox. xi. 31. row 2. 1—J. B. iii. 589. 2—Walc. 5.

(*Stem* three to eight inches high, the lowermost leaves stalked, ob-ovate, the others sessile. *Racemes* many-flowered, at first small, compact, and revolute, but much elongated, and quite erect, when in fruit; a transformation also observable in other species. Valves of the *bloss.* nearly sunk in the tube. The smaller flowers and annual roots are the peculiar characteristics of this species. E.)

FIELD SCORPION-GRASS. (Irish: *Lus Miule*. Welsh: *Ysgorpiionllys y meus-ydd*. E.) *Myosotis scorpioides*, a *arvensis*. Linn. (Fl. Brit. E.) Walls, dry pastures, gardens, and sandy places. A. June—Aug.

(M. VERSICOLOR. Seeds smooth: leaves hairy: clusters on long, naked stalks: calyx longer than the partial stalks; hairs of its tube hooked: root fibrous.

E. Bot. 480. † 1.

Stem usually three or four inches high, but in marshy places much more luxuriant. *Leaves* rather narrower than in *M. arvensis*. *Flowers* very small, yellow and blue; (according to Lehmann), retaining their respective colours; remarkable also for short *pedicels*. Large specimens much branched, the *racemes* themselves extending to eight inches. Grev.

YELLOW AND BLUE SCORPION-GRASS. In dry fields and moist meadows; also on walls, not uncommon. *M. versicolor*. Pers. Lehm. Sm. *M. arvensis* β. Roth. *M. scorpioides* β. Fl. Brit. Huds. Relh. *M. scorpioides* γ. Linn. A. April—June. E.)

LITHOSPERMUM.* Bloss. funnel-shaped, tube open and without valves at the mouth: *Cal.* with five divisions: *Nuts* four, very hard, imperforate.

L. OFFICINALE. Seeds smooth: blossoms scarcely longer than the calyx: leaves spear-shaped, with lateral ribs.

Fl. Dan. 1084.—*E. Bot.* 134.—*Woodw.* 213.—*Kniph.* 9.—*Ludw.* 147.—*Dod.* 83. 2.—*Ger. Em.* 609. 2.—*Park.* 432. 1.—*H. Ox.* xi. 31. row 1. 1.—*Ger.* 486. 2.—*Matth.* 918.—*Fuchs.* 489.—*Trag.* 536.—*J. B.* iii. 590. 2.

(*Stem* annual, about two feet high. *Plant* rough, stiff, and branched. *Leaves* strongly veined, very entire, hairy beneath. *Spikes* simple, leafy, incurved. *Fl. Brit. E.*) Blossoms pale yellow, with a protuberance at the base of each segment. Seeds as hard as bone, (polished, rarely more than two perfect. *E.*)

GRAY-MILL OR MILLET. COMMON GROMWELL. (PEARL PLANT. Welsh: *Maenhad meddygawl*; *Grawn yr haul.* *E.*) Dry gravelly soil. In woods, common. P. May—June.

L. ARVENSE. Seeds wrinkled: blossom scarcely longer than the calyx: (leaves obtuse, without lateral ribs. *E.*)

Kniph. 10.—*E. Bot.* 123.—*Riv. Mon.* 9. 1.—*Fl. Dan.* 456.—*Blackw.* 430.—*H. Ox.* xi. 28. 7.—*Ger. Em.* 610. 4.—*Park.* 432. 6.—*Matth.* 917.

(*Stem* a foot high, often branched and decumbent. *Leaves* tongue-shaped, blunt, one-ribbed, without veins. *Spikes* terminal leafy, at length much elongated. *Fl. Brit. E.*) Perfect seeds either two, three, or four, but generally three, with one abortive; and when there are four perfect ones, which I found to be the case in two instances, there were besides two abortive, and six divisions in the calyx. Aikin. *Roots* crimson red. Blossom white. Seeds brown, polished, rather covered with hard tubercles than wrinkled. Calyx segments, after flowering, three or four times as long as the seeds, but in the preceding species not twice their length.

CORN GROMWELL. BASTARD ALKANET. SALFERN. PAINTING ROOT. (Welsh: *Maenhad yr ar*; *Grawn y llew.* *E.*) Corn-fields, common. A. May—June.†

L. PURPUREO-CERULEUM. Seeds smooth: blossom much longer than the calyx: (leaves spear-shaped, acute, without lateral ribs: barren stems prostrate. *E.*)

Hook. Fl. Lond.—*Jacq. Austr.* 14.—*E. Bot.* 117.—*Pet.* 29. 6.—*Clus.* ii. 163. 2.—*Dod.* 83. 1.—*Lob. Obs.* 245. 1.—*Ger. Em.* 609. 1.—*Park.* 431.—*H. Ox.* xi. 31. 1.—*Pluk.* 762.—*Ger.* 486. 1.—*J. B.* iii. 692. 1.

(*Stems* twelve to eighteen inches long, leafy. *Leaves* spear-shaped, contracted at the base into a short foot-stalk; verrucose on the upper surface, paler beneath, tapering to a point, one-ribbed, without veins, rough.

* (From *λίθος* a stone; and *σπέρμα*, seed; from the stony hardness of the seeds. *E.*)

† Girls in the north of Europe paint their faces with the juice of the root upon days of festivity. The bark of the root tinges wax and oil of a beautiful red, similar to that which is obtained from the root of the foreign Alkanet. Sheep and goats eat it. Cows are not fond of it. Horses and swine refuse it. (It injures the scythes and sickles of the reapers by its siliceous cuticle. Barton, *E.*)

rough, not cottony. *Flowers* dull blue, or reddish, smaller than in the preceding, neither has the plant the strong scent nor the hoariness of that. (*Radical leaves* ovato-lanceolate, on very long foot-stalks. Hook. E.)

(GREEN-LEAVED HOUND'S-TONGUE. E.) *C. officinalis*. γ . Linn. Near the third milestone from Worcester on the road to Pershore. Nash. (By the road side near the church, at Chingford, Essex. Mr. Woodward. Out of St. Benedict's gate, Norwich. Andrew Caldwell, Esq. In Norberry Park, Surry. Mr. Winch. Near the river at Guildford. Mr. W. Christy. In a hedge upon the Roman road, near Stowting, Kent. Rev. Ralph Price, in Sm. Obs. In Pigwell-lane; and on a hedge bank near the Cape of Good Hope, Warwick. Perry. Carse of Gowrie. Mr. G. Doil. Hook. E.) B. May—June.

(C. OMPHALODES. Stems creeping: root-leaves heart-shaped.

Kniph. 1—*Curt. Bot. Mag.* v. 1. pl. 7.

Leaves oval, and tapering to a point, rather than heart-shaped, smooth. *Blossoms* larger than those of the preceding species, bright blue. *Stems* slender, flowering ones nearly upright, but, as Curtis observes, putting forth trailing shoots, which take root at the joints.

BLUE NAEVWORT. Discovered by Mrs. Taylor growing among the rocks at Teignmouth. Polwhele. Rev. Pike Jones suspects this must be an error, he having diligently searched the same spot in vain.

P. March—April. E.)

PULMONARIA.* *Bloss.* funnel-shaped; mouth not closed: *Calyx* tubular, but pentagonous.

(1) *Calyx* as long as the tube of the blossom.

P. ANGUSTIFOLIA. Root-leaves spear-shaped.

(*E. Bot.* 1628. E.)—*Kniph.* 1—*Fl. Dan.* 483—*Ger.* 662. 2—*Clus.* ii. 170. 1—*Ger. Em.* 808. 2—*H. Ox.* xi. 29. row 2. 5—*Park. par.* 251. 2.

(Much taller than the following species. E.) Very nearly allied to *P. officinalis*, differing only in the narrowness of its leaves. Linn. *Blossom* red at first, expanding, soon changing to blue. All the *leaves* spear-shaped, (and much less spotted than in *P. officinalis*. E.)

BUGLOSS-COWSLIP. LONG-LEAVED SAGE OF JERUSALEM. NARROW-LEAVED LUNGWORT. "Mr. Goodyer found it in a wood by Hollar House in the New Forest." Johnson, in *Ger. Em.* p. 809. Mr. Robson informs me that a specimen was sent him in the year 1783, by the late Mr. Waring, of Leescrood, Flintshire, who found it growing wild on the ruins of the monastery of Maes Glas, in that county; (but Mr. Griffith says Mr. Waring's specimen proves to be *Anchusa semierivirens*. Mr. Griffith had, however, himself the good fortune to discover this very rare plant in May, 1804, in a wood through which the road did then pass between Newport and Ride, in the Isle of Wight; and in the summer of 1806, it was gathered in the same spot by Mr. Turner and Mr. W. Borrer, directed thither by the same gentleman. P. May. E.)

P. OFFICINALIS. Root-leaves egg-heart-shaped, rough; upper leaves egg-shaped, acute. E. Bot.

* (From *pulmo*, the lungs; the leaves being spotted like tubercular lungs. E.)

Ludw. 45—*Fl. Dan.* 482—*Woodv.* 212—*Kniph.* 1. two figures—*E. Bot.* 118. (but the uncoloured radical leaves are those of *P. angustifolia*. E.) *Blackw.* 376—*Ger.* 662. 1. and 663. 4—*Clus.* ii. 169. 1—*Dod.* 135. 1—*Lob. Obs.* 317. 1—*Ger Em.* 808. 1—*H. Ox.* xi. 29. 8—*Walc.*—*Park. Par.* 251. 1—*J. B.* iii. 595—*Matth.* 1040.

Stems ten or twelve inches high ; numerous, branchless, angular, upright, hispid. *Leaves* entire, hispid, light green, with white spots on the upper surface. *Root-leaves* egg-heart-shaped, on long leaf-stalks, not much lengthened out at the base. *Lower* stem-leaves egg-spear-shaped. *Upper* leaves heart-spear-shaped, half embracing the stem. Sowerby's figure in *E. Bot.* wants the lowest root-leaves, which are always egg-heart-shaped. Robson. *Leaves* frequently with white spots. *Blossoms* purplish red when newly expanded, soon changing to blue. *Tube* white ; mouth hairy.

SCOTTED LUNGWORT. COWSLIP OF JERUSALEM. BROAD-LEAVED LUNGWORT. (Woods and thickets, rare. E.) In Cliff Wood, about six miles west of Darlington. Mr. Robson. In a shady lane about a mile from Bromham, Wiltshire. Mr. Norris. (Between Thurleigh and Milton Ernys, Bedfordshire. Abbot. Arniston woods, abundant ; banks of the north Esk, near Kevoek-mill. Maughan. Grev. *Edin.* E.) P. April—May*

(2) *Calyx* only half as long as the tube of the blossom.

P. MARITIMA. Leaves egg-shaped, (glaucous, sprinkled with callous points ; E.) stems branched, trailing.

Dicks. H. S.—(*E. Bot.* 368—*Curt. E.*)—*Lightf.* 7—*Dill. Elth.* 65—*Fl. Dan.* 25—*Pluk.* 172. 3—*H. Ox.* xi. 28. row 2. 12—*Park.* 766. 5—*Sibbald.* 12. 4.

(*Herb* remarkably glaucous, turning blackish when dried. *Stems* a foot in length. *Seeds* not polished. E.) All the leaves sessile ; upper ones oval, lower ones oval battledore-shaped. Harriman. *Blossoms* pink before they expand, immediately after changing to fine blue. Atkinson.

SEA BUGLOSS. SEA LUNG-WORT. (Welsh: *Llys yr ysgysfaint arfor* ; *Glesyn y morlân.* *P. maritima.* Linn. With. *Lightf.* *Curt. Sm.* *Fl. Brit.* Willd. *Lithospermum maritimum.* Lehm. Hook. *Sm.* E.) On sandy shores. Near Maryport, Cumberland. Rev. — Harriman. About Aberdeen. Mr. Browne. West shore of the Isle of Walney. Mr. Atkinson. (North-east coast of Anglesey. Rev. H. Davies. *Bot. Guide.* About Aberystwith. Evans. Shore by the Ormes Head. Mr. A. Aikin. The Southans, Devonshire. Mr. Cornish. Shores of the Firth of Forth. Mr. Winch. E.) *P. July.†

SYMPHYTUM.‡ *Bloss.* funnel-shaped, protuberant towards the top : mouth closed by awl shaped, converging valves, which have an open orifice on the outside, near the border : *Nuts* four, perforate.

* When burnt, it is said to afford a larger quantity of ashes than any other vegetable ; often one-seventh of its weight. Sheep and goats eat it. Cows are not fond of it. Horses and swine refuse it. *Chrysomela nemorum* feeds upon it. (The speckled appearance of the leaves has been imagined to resemble the human lungs, and hence was vainly inferred their salutary effect on that viscus. E.)

† Dr. Blair attributes a narcotic power to this plant, in some instances fatal. The taste disagreeably resembles oysters. E.)

‡ (From *σύνφυον*, to cement ; probably alluding to the healing quality of the mucilaginous roots. E.)

S. OFFICINALIS. Leaves egg-shaped, very decurrent.

Ludw. 80—*Kniph.* 1—*Curt.* 230—(*E. Bot.* 817. *E.*)—*Woodv.* 215—*Fl. Dan.* 664—*Blackw.* 252—*Matth.* 961—*Dod.* 134. 1—*Lob. Obs.* 315. 1—*Ger. Em.* 806. 1—*Park.* 523. 1—*Ger.* 660. 1 and 2—*H. Ox.* xi. 29. row 1. 1—*Pet.* 29. 5—*Fuchs.* 695—*Trug.* 240—*J. B.* iii. 593.

(*Clusters* growing in pairs, hirsute, forked at the base, revolute. *E.*) *Calyx* close. *Blossom*. yellow white, tube as long as the calyx. *Valves* spear-shaped, flat, covering the anthers; *edge* studded with small shining glands. (*Root* black on the outside. *Stem* three feet high. *E.*)

Var. 2. (Flore purpureo. E.) Red-flowered. *Calyx* expanding, shorter than the tube of the blossom.

Kniph 1. f. 2.

S. patens. Sibth. *Fl. Ox.* Frequently found growing with the preceding, and flowering at the same time.

COMMON COMFREY. (Irish: *Luss na Knau brisdi. E.*) Banks of rivers and wet ditches. P. May—June.*

S. TUBEROSUM. Leaves slightly decurrent; the uppermost opposite.

Jacq. Austr. 225—*Obs.* 63—(*E. Bot.* 1502. *E.*)—*Kniph.* 1—*Chus.* ii. 166. 2—*Ger. Em.* 806. 3—*H. Ox.* xi. 29. row 1. 3—*J. B.* iii. 594.

Possibly a variety of *S. officinale*. *Root* white, and not black on the outside as that of the preceding. *Linn. Root* tuberous. *Blossom* yellow white. (*Leaves* egg-shaped. *Stems* shorter than in the preceding, simple, or only slightly branched towards the top. *E.*)

TUBEROUS-ROOTED COMFREY. Apparently wild, though suspected originally to have escaped from the garden. Fen Banks, Lincolnshire; and Cambridgeshire, intermixed with *S. officinale*. Woodward. (Opposite the new well (St. Bernard's,) at the Water of Leith, but more plentifully in Dr. Robertson's walks at North Marchiston, near Edinburgh. Mr. Yalden. Collington woods, Woodhall, &c. Common about Glasgow, as banks of the Clyde, Daldowie, Bothwell, and Hamilton. Hooker. Very plentiful in a hedge near the Parsonage at Slinfold, Sussex. Mr. Borrer, in *Bot. Guide*. P. June—July. *E.*)

BORAGO. *Bloss.* wheel-shaped; mouth closed with rays: *Nuts* four, imperforate.

B. OFFICINALIS. All the leaves alternate; calyx expanding.

Kniph. 3—*Ludw.* 3—*Fuchs.* 142—*Dod.* 627. 1—*Woodv.* 217—*E. Bot.* 36—*Ger. Em.* 797. 2—*J. B.* iii. 574—*Blackw.* 36—*Matth.* 1186—*Trug.* 237—*Ger.* 623. 2 and 11—*H. Ox.* xi. 26. 1, on the left—*Lob. Obs.* 308. 2—*Ger. Em.* 797. 1.

(*Stems* branched, one to two feet high. *E.*) *Fruit-stalks* terminal, supporting several drooping bunches of flowers. *Blossom* blue, white, or flesh-coloured. Whole plant rough with numerous white prickly hairs, and

* The particles of the pollen appear in the microscope as two globules united together. The leaves give a grateful flavour to cakes and panada, and the young stems and leaves are excellent when boiled. The roots are glutinous and mucilaginous, (hence recommended in catarrhal affections: *E.*) and a decoction of them is used by dyers to extract the colouring matter of gum lac. Cows and sheep eat it. Horses, goats, and swine refuse it. *Linn.*

viscid with mucilage. (Mr. Thomson observes that the leaves exemplify a variety of the subulate bristle, seated on a vesicular tubercle, containing a fluid which is ejected through the bristle when it is compressed so as to wound the finger; and which, being left in the wound, excites a slight degree of inflammation in the part. E.) *Leaves* egg-spear-shaped, (more or less toothed, wavy. E.) *Blossom segments* spear-shaped; the *prominences*, one rising from the base of each segment, brownish, half egg-shaped. *Filaments*, the portion above the insertion of the anthers cylindrical, dark blue, that below the insertion thick, brown, and glandular. *Anthers* black.

COMMON BORAGE. (Welsh: *Bronwerth. Tufol yr ych.* E.) Originally from Aleppo; but now found in many parts of Europe. Walls and amongst rubbish, (but suspected not to be originally indigenous. On the Ballast Hills of Tyne and Wear. Mr. Winch. E.) Banks of the river near Tavistock. Mr. Knappe. On the summit of a high rock at Llan-rydno near Conway. Rev. S. Dickenson. (Godshill, Isle of Wight. Mr. W. D. Snooke. Burnt Island. Mr. Maughan. Debris of Salisbury Craigs. Mr. Bainbridge. Grev. Edin.

With *white blossoms*. Entrance into Sandwich from Deal, and about Lyme Castle. Dillwyn, in Bot. Guide. E.) B. June—Aug.*

ASPERUGO.† (*Bloss.* shortly infundibuliform, mouth closed with convex scales; *Seeds* (nuts,) covered by the calyx. E.)

A. PROCUMBENS. Calyx when in fruit compressed.

(E. Bot. 661. E.)—*Kniph.* 3—*Fl. Dan.* 552—*H. Ox.* xi. 26. 13—*Ger.* 963—*Dod.* 356—*Ger. Em.* 1122. 2—*Lob. Obs.* 466. 2—*Garid.* 9—*J. B.* iii. 600. 2, and 601. 2.

(*Stems* angular, twelve to eighteen inches long, procumbent, rough, with hooked prickles. *Leaves* mostly ternate, pointing upwards, oblong-lanceolate, acute, the lower ones on foot-stalks, rough with prickles. *Blossoms* small, blue, axillary, on short peduncles, which are deflexed when in fruit, with an enlarged calyx. E.)

TRAILING CATCHWEED. (GERMAN MADWORT. E.) In roads and amongst rubbish. (Wangford, near Brapdon, Suffolk, where it was

* By the experiments of M. Marggraff, Mem. de Berlin, 1747, page 73, it appears that the juice affords a true nitre.—Borage is now seldom used inwardly but as an ingredient in cool tankards for summer drinking, though the young and tender leaves are agreeable in salads, or as a pot-herb. (It was formerly esteemed a principal vegetable cordial, as testifies the Latin proverb, .

“Ego Borago gaudia semper ago:”

or, as Gerard has it, “Those of our time do use the flowers in sallads to exhilarate and make the minde glad. There be also many things made of them, used every where for the comfort of the hart, for the driving away of sorrowe, and increasing the ioye of the minde.” Pity it were that even a fictitious expellant of the Blue Devils should become obsolete; better even to be cheated into good spirits, than suffered to sink into melancholia, for want of a little credulity. The great Bacon himself never presumed to doubt that “the leaf of Burrage hath an excellent spirit to repress the fuliginous vapour of dusky melancholy.” However this may be, it still affords nourishment to *Phaena Gamma*: and few apirians will neglect to cultivate a plot of it for the benefit of their moral instructors. E.)

† From *asperitas*; descriptive of the roughness of its leaves and stems; by which it adheres to whatever it touches. E.)

286 PENTANDRIA. MONOGYNIA. ECHIUM.

shown to Mr. Woodward by Mr. Eagle. North side of Llandidno Rocks, descending to the Llech, in a most perilous situation, and certainly wild. Mr. Griffith. Conflux of the Corve and Teme, Ludlow. Dr. Evans, in Bot. Guide. By the church and castle of Dunbar. Hooker. Guillon Links. Mr. Arnott, in Grev. Edin. E.) A. April—May

LYCOP'SIS.* *Bloss.* tube incurved, mouth closed with scales :
Nuts four, perforate.

L. ARVEN'SIS. Leaves spear-shaped, hirsute; calyx while in flower upright: (limb of the blossom slightly unequal. E.)

Curt. 336—(*E. Bot.* 938. E.)—*Kniph.* 3—*Fuchs.* 269—*Dod.* 628. 2—*Ger. Em.* 799. 3—*J. B.* iii. 581—*H. Ox.* xi. 26. 8—*Riv. Mon.* 7. 2—*Fl. Dun.* 435—*Blackw.* 234—*Trag.* 234.

An extremely harsh, rough, and bristly plant. *Stems* one to two feet high, branched, thick, cylindrical. *Leaves* nearly strap-shaped, sometimes nearly egg-shaped; waved at the edge, and somewhat toothed. *Calyx segments* spear-shaped. *Blossom* sky-blue; (tube and valves white. *Racemes* in pairs, forked, revolute, leafy. *Fruit* rugose. *Bristles* arising from callous bulbs. E.)

SMALL BUGLOSS. (Welsh: *Bleidd-drem*; *Tafod yr ych culddail.* E.)
Corn-fields and road sides. A. June—Sept.†

ECHIUM.† *Bloss.* irregular; mouth naked: *Nuts* four, large, rough, imperforate: (*Summit* cloven. E.)

E. VULGA'RE. Stem rough with bristles and tubercles: stem-leaves spear-shaped, hirsute; single-ribbed: flowers in lateral spikes, hairy.

E. Bot. 181—*Kniph.* 1—*Fl. Dan.* 445—*Riv. Mon.* 7. 1—*Blackw.* 299—*Matth.* 996—*Dod.* 631. 1—*Lob. Obs.* 312. 2—*Ger. Em.* 802. 2—*Park.* 414. 1—*H. Ox.* xi. 27. row 3. 1—*Matth.* 892.

(*Plant* rough with prickly bristles. *Stems* one to two feet high, leafy, crowded with spikes forming one common raceme. *Leaves* alternate, dull green, the lowest stalked. *Root-leaves* near two feet long, strap-shaped. *Flowers* numerous, in recurved spikes gradually becoming erect; those of each spike pointing one way, and closely wedged together. *Blossoms* large and showy, before it expands of a fine red, afterwards of a bright blue. *Stamens* much longer than the blossom. (*Leaves* tubercled, and rough with hairs. E.)

COMMON VIPER GRASS OR VIPER'S BUGLOSS. (Welsh: *Gwiberlys cyffredin*; *Bronwerta y wiber.* E.) Sandy corn-fields, walls, and on rubbish. Particularly on the clay or schistus thrown out of coal mines.

B. June—Aug.‡

* (From *λυκος*, a wolf, and *ὤψις*, a face; from a supposed similitude in the blossom to the countenance of that animal. E.)

† (Abbé Fontana has strongly recommended the application of this plant, bruised and pounded, to the worst kind of carbunculous ulceration; but the practice has not attracted much attention in England. E.)

‡ (From *εχis*, a viper; its seeds when ripe resembling the head of that reptile; and hence, possibly, originated the expectation of its proving an alexipharmic. E.)

§ Cows and sheep are not fond of it. Horses and goats refuse it. This plant dried and powdered forms an ingredient of the celebrated Spanish remedy against the bites of

(Var. 1. *E. violaceum*. Violet-flowered. With. Ed. 3 and 4. E.)

Whole plant smaller, more slender, weak, and hairy, than *E. vulgare*, but the hairs softer, some of them rising from tubercles. The tubercles hardly, if at all, discernible on the leaves; though they are on the stem, where they are intermixed with short hairs not rising from tubercles. *Calyx* very unequal. Blossom unequal, smaller than those of *E. vulgare*, deep blue. Stamens always within, or just even with, the blossom. Woodw.

Banks and corn-fields. Near Norwich. Woodward. Aug.

(Var. 2. *Flore albq.* White-flowered. On the south-west point of Box Hill, Surry. Mr. Winch. Very dwarfish and with white flowers at Duncansby, Caithness. Hooker.

An extremely elegant variety, with flowers of a delicate pinkish hue, has been communicated to us from Little Hampton, on the Sussex coast, as *E. Italicum*; which latter, however, has blossoms invariably white, and has probably never been found in Britain, unless indeed, casually, on Sunland Ballast Hills, as reported by Mr. Winch. E.)

PRIMULA.* Bloss. salver-shaped, tube cylindrical; mouth open: Caps. one-celled, cylindrical, many-seeded, opening with ten teeth: Summit globular.

P. VULGARIS. Leaves wrinkled toothed: (stalk single-flowered. E.): border of the blossom flat.

Curt.—Sheld. 11—Fl. Dan. 194—E. Bot. 4—Walc.—Blackw. 52—Clus. i. 302. 1—Dod. 147. 3—Lob. Obs. 205. 4—Ger. Em. 781. 5—Park. 535. 1—H. Ox. v. 24. 8 and 9—Park. Par. 243. 1—Col. Phytob. 6. 1.

Common stalk, exceedingly short, and concealed beneath the surface of the ground, so that the stems which support the flowers are only elongated little fruit-stalks. Linn. This is sometimes, but not always the case,

vipers and mad dogs, particulars of which may be found in Month. Mag. vol. 29, p. 414. The showy blossoms are extremely attractive to bees,

“Flying solicitous from flower to flower;”

even though their delicate wings are frequently torn by the bristly hairs which would seem to defy the little plunderers. The irresistible instinct by which innumerable small animals are impelled to toil or recreate on the different species of plants would alone seem to bespeak an importance in the object of their exertions, beyond the immediate supply of their own necessities. Accordingly, we find that thus is secured the winter store, essential to the existence of their race, and that the same operation likewise conduces to the service

that the various provisions which have been devised for the dispersion of seeds, and introducing them into proper situations for germination, are not the least admirable portion of the wonderful scheme of creation. Every class of beings appears appointed by collateral means to promote these designs; man, beasts, birds, and reptiles; and, for aught we

could powers with which seeds are furnished, manifest what providence has been made for the dispersion of seeds, and successive production of the whole vegetable race.” p. 128. E.)

† (Diminutive of *primus*, first, or early, in the Spring. Hence also *Prime-rose*. E.)

as Mr. Aikin observed to me; and Curtis tells us, that by cultivation it may be brought to throw up a long common fruit-stalk like the *Oxlip*; which countenances the idea of the latter being a variety of this. *Leaf-stalks* when fully grown, longer than the leaves. (*Blossom* pale yellowish, or sulphur-colour; delicately fragrant. *Leaves* radical, irregularly toothed, numerous, rugose. E.)

Var. 2. *Liver-coloured*. Blossoms a red liver-colour.

Hedge banks and pastures; between Penzance and Treveylea, Cornwall. (Felton Woods, Northumberland. Mr. Winch. Allesley, Warwickshire. Rev. W. T. Bree, in Part. Mid. Fl. E.) May.

COMMON PRIMROSE. (Irish: *Bainne bo bliughtain*. Welsh: *Briallu cyff-fredin*; *Tewbanuog fechan*. Gaelic: *Sograch* E.) *P. veris* γ. *acaulis*. Linn. *P. sylvestris*. Scop. *P. vulgaris*. Huds. Woods, hedges, thickets, and heaths, particularly in a clayey soil, (growing generally in tufts. E.) P. April—May.*

(Var. 3. *White-flowered*. Blossoms perfectly white, with a yellow eye. Cornwall. With. Allesley. Rev. W. T. Bree. E.)

P. ELA'TIOR. Leaves wrinkled and toothed: stalk many-flowered: outermost flowers drooping: border of the blossom flat.

* (An agreeable wine is prepared from Primroses, not very unlike that made from Cowslips, but considered still more delicate in flavour. E.) Gerard reports that a dram and a half of the dried roots, taken up in autumn, operates as a strong but safe emetic. Sheep and goats eat the plant. Cows are not fond of it. Horses and swine refuse it. Linn. Silk worms may be fed with the leaves. Trans. Soc. of Arts, ii. p. 157. Few spots are more attractive amid the general revival of nature than

“Where the hardy *Primrose* peeps
From the dark dell’s entangled steepes.”

• “Oh, who can speak his joys when Spring’s young morn
From wood and pasture opened on his view;
When tender green buds blush upon the thorn,
And the first *Primrose* dips its leaves in dew.” Clare.

Few flowers are connected with more agreeable associations. The maiden’s youthful prime has, not inaptly, been compared to

• — “the meek
And soft-eyed *Primrose* :”

And Shakspeare, in more pensive musing, contemplates them as emblems of premature decay, between childhood and maturity,

• — “pale *Primroses*,
That die unmarried, ere they can behold
Bright Phoebus in his strength.”

Varieties single and double, and of different tints, are cultivated in gardens, but none are more elegant than the double lilac. “It is however,” observes Miss Kent, “the Sulphur-coloured Primrose which we particularly understand by that name: it is this Primrose which we associate with the cowslips and the meadows: it is this which shines like an earth-star from the grass by the brook side, lighting the hand to pluck it. We do indeed give the name of Primrose to the lilac flower, but we do this in courtesy: we feel that it is not the Primrose of our youth; not the Primrose with which we have played at bo-peep in the woods; not the irresistible Primrose which has so often lured our young feet into the wet grass, and procured us coughs and chidings. There is a sentiment in flowers; there are flowers we cannot look upon, or even hear named, without recurring to something that has an interest in our hearts; such are the Primrose, the Cowslip, the Daisy, &c.” E.)

(*Hook. Fl. Lond.—E. Bot.* 513. E.)—*Kniph.* 1—*Fl. Dan.* 434—*Fuchs.* 851—*J. B.* iii. 496. 2—*Clus.* 301. 2—*Dod.* 147. 1—*Lob. Obs.* 305. 3—*Ger. Em.* 780. 2—*Ger.* 635. 1—*Col. Phytob.* 6. 2.

Blossoms (all umbellate, E.) pale yellow; diameter of the border more than the length of the tube. *Leaf-stalks* shorter than the leaves. *Leaves* narrow-ovate about the middle. *Scapes* few, erect, three to six inches high. E.

OXLIP. GREAT COWSLIP. OXLIP PRIMROSE. (Welsh: *Briallu Mair disaur*, E.) *Primula*. Hall. n. 609. *P. veris elatior*. Linn. *P. vulgaris* 3. Huds. Ed. II. *P. veris* β. Ed. I. Woods, hedges, and clayey pastures, rare. (Barren Wood, near Armathwaite and Dalemmain Woods, Cumberland. Hutchinson. In the wood near Tyfry, Anglesey. Welsh Bot. Sea coast between Queensferry and Inverkeithing; woods about Starley Burn near Burntisland, abundant. Maughan, in Grev. Edin. E.) High pastures, near Little Wenlock, Shropshire. P. April—May.*

Many Botanists have considered the Oxlip to be a hybrid production between the Common Primrose and the Cowslip, or that, if a variety, it rather belongs to the former than the latter. (Mr. Turner says he has specimens in which both the Primrose and Oxlip are produced from the same root. For some interesting experiments by the Hon. W. Herbert, tending to establish the identity of these three species, (an opinion not altogether wanting the sanction of other authority,) vid. Tr. Hort. Soc. E.)

P. OFFICINALIS. Leaves wrinkled and toothed: stalk many-flowered: all the flowers drooping: border of the blossom concave.

(*E. Bot.* 5. E.)—*Kniph.* 3—*Indw.* 43—*Fl. Dan.* 433—*Blackw.* 226—*Walc.*—*Curt.* 67—*Fuchs.* 850—*Clus.* i. 301. 1—*Lob. Obs.* 305. 1—*Ger. Em.* 780. 1—*Trag.* 201—*Ger.* 635. 2.

(*Leaves* all radical, contracted about the middle. *Calyx* downy. *Scape* three to six inches high. E.) *Leaf-stalk* often longer than the leaves, which is not the case in the Primrose or Oxlip. *Blossom* small, sweet-scented, full yellow; with an orange stain at the base of each segment; contracted about the middle of the tube, where the stamens are inserted.

(Var. 2. Blossoms bordered with scarlet: first approach to the Polyanthus. Near Brunton Mill, Northumberland. Mr. Winch. E.)

COMMON COWSLIP. PAIGLE. (Welsh: *Briallu Mair sawyrus*; *Dagrau Muir*. E.) *P. veris officinalis*. Linn. *P. veris*. Huds. Sm. Hook. Meadows and pastures in loamy or clayey soil (often entirely covered

* (The *Polyanthus* is believed to originate both from the Primrose and Oxlip, but principally from the latter. The double and single varieties of this family of plants produced by culture appear to be almost endless. Florists prefer the rose-eyed *Polyanthus*, or that wherein the anthers appear at the top of the tube of the blossom; to the pin-eyed, wherein the stigma of the pistil is most obvious; (a difference of conformation also occurring in wild specimens); but to an impartial observer, the real beauty of the flower is far from being thus circumscribed. These plants are often exhausted by the minute red spider (*Acarus*), which rapidly increases on the under surface of the leaves, and is only to be destroyed by transplanting and the application of tobacco-water. The favourite tribe of

“*Auriculas enricul’d*
• With shining meal o’er all their velvet leaves,”

(derived from *Primula Auricula*, a native of the Swiss mountains), is said to be rendered of surpassing size and beauty by the application of pieces of raw meat near the roots; and, if this be the fact, the same practice might probably be advantageously adapted for enriching the *Polyanthus*, or even moistening the roots with the sanguineous fluid itself, might probably produce the desired effect. E.)

with this beautiful spring flower, though so rare in Devonshire, according to the Editor of Camden, as to grow exclusively about Kent's Hole, near Torquay. E.) P. April—May.*

P. FARINO'SA. Leaves scoloped, smoothed: border of the blossom flat: (summit undivided. E.)

Dicks. H. S.—E. Bot. 6—Curt.—Fl. Dan. 125—Walc.—Gmel. iv. 44. 2 and 3—Kniph. 9—Ger. 639. 2 and 1—Clus. i. 300. 1—Lob. Obs. 307. 2—Ger. Em. 783. 1—H. Ox. v. 24. row 2. 5 and 6—Clus. 300. 2—Lob. Obs. 307. 1—Ger. Em. 783. 2—J. B. iii. 498. 3. Ib. 3. 6—H. Ox. Ib. 7—J. B. Ib. 2. Swert. ii. 4. 9—Park. Par. 243. 10.

(A most elegant plant, much smaller than the last. Flowers erect. Scape six to nine inches high, umbellate. E.) Fruit-stalks and calyx as if dusted with flour. Linn. Leaves veiny and mealy underneath. Blossom bluish red, with a yellow eye.

BIRD'S-EYE PRIMROSE. Marshes and bogs on mountains in the north. Ray. Woodward. Meadows near Kendal in the richest profusion. Stokes. Wet places near Darlington. Mr. Robson. Covering whole meadows with a fine pinky colour, about Coniston, and other parts of Craven,

* The blossoms are used for making Cowslip wine, (accounted soporific, and thus recommended by Pope,

————— “for want of rest
Lettuce and Cowslip wine: probatum est.”

Montgomery also alludes to the like process:

“Whose simple sweets with curious skill,
The frugal cottage dames distil,
Nor envy France the vine,
While many a festal cup they fill
With Britain's homely wine.”

The flowers are, for the same purpose, sometimes mixed with tea, or infused alone. They have likewise been considered antispasmodic, whence probably the French designation *Herbe de la Paralytie*. E.) The leaves are sometimes eaten as a pot-herb, and in salads. The root has a fine scent, like anise.—Silk worms are fond of the leaves and flowers. Trans. Soc. of Arts, ii. p. 157; (but the silk thus produced is not of the best quality. Milton elegantly defines the appropriate tints of these favourite congeners,—

“The flowery May, who from her green lap throws
The yellow Cowslip, and the pale Primrose.”

And our great dramatic bard, with an accuracy of discrimination approaching to scientific, and an inventive imagination truly poetical, depicts the saffron-coloured spots of the blossom as “Fairy favours,” in his *Midsummer Night's Dream*. But for genuine simplicity, and unsophisticated pathos, no effusion connected with the subject exceeds the following by W. Howitt, on finding an early Cowslip:—

“It is the same! It is the very scent,
That bland, yet luscious, meadow-breathing sweet,
Which I remember when my childish feet,
With a new life's rejoicing spirit, went
Thro' the deep grass with wild flowers richly blent,
That smiled to high Heav'n from their verdant seat.
But it brings not to thee such joy complete:—
Thou can'st not see, as I do, how we spent
In blessedness, in sunshine, and in flow'rs,
The beautiful noon: and then, how seated round
The odorous pile, upon the shady ground,
A boyish group—we laughed away the hours,
Plucking the yellow blooms for future wine,
While o'er us play'd a mother's smile divine.” E.)

Yorkshire. Mr. Caley. (Frequent in the mountainous pastures of Westmoreland, Durham, Cumberland, and Yorkshire. Marshes near the mouth of the river Dee, Flintshire. Mr. O. Sims. Bot. Guide. (Boggy ground, above Woodhouse-lee. Mr. Maughan in Grev. Edin.

A *white-flowered* variety has been found near Aspatria, Cumberland, with the commoner kind, by the Rev. J. Dodd. ditto. E.) P. May—July.

(P. SCOTICA. Leaves finely toothed, even, powdery on both sides: limb of the blossom flat: mouth with a notched border: stigma five-cleft.

Hook. Fl. Lond. 133.

Limb of the blossom of a deep violet colour: *calyx* rather more tumid than in *P. farinosa*; but the five-notched *stigma*, accompanied by a furrowed *style*, appears to be the most material characteristic of a distinct species. Hook. Sm. How far this elegant plant, previously known in gardens, will, upon further acquaintance, justify the position it has recently assumed, may be questionable, though it may be prudent, for the present, to follow the opinion of those Botanists who have enjoyed the best opportunities of observing it.

SCOTTISH PRIMROSE. Discovered by Mr. Gibb of Inverness, on Holborn Head, near Thurso in Caithness, abundantly; also between Thurso and Dunbeath. P. July. E.)

CYCLAMEN.* Bloss. wheel-shaped, reflexed; tube very short; mouth projecting: Caps. one-celled, pulpy within: Summit acute.

(C. HEDERIFOLIUM. Blossom bent back as if broken: leaves circular, heart-shaped, scolloped, denticulate: ribs and foot-stalks rough. E.)

Jacq. Austr. 401—(E. Bot. 548. E.)—Blackw. 147—Fuchs. 451—Miller, 115—Ger. 694—Dod. 337—Lob. Ic. 605—Ger. Em. 843—Park. 1364—Kniph. 3—Cam. Epit. 357.

(Root globular, large, with many fibres. Stamens very short, concealed within the blossom. Anthers awl-shaped, saffron-coloured. Style awl-shaped. Fl. Brit. E.) Leaves varying from circular to angular, variegated with dark and glaucous green, purplish underneath. Foot-stalks wavy towards the base. A lowly compact plant. Blossoms purplish pink, or whitish, pendulous, on naked stalks taller than the leaves. Flower-stalks at length curl spirally and bury the fruit in the earth. Sm. E.)

(IVY-LEAVED CYCLAMEN. E.) SOW-BREAD. *C. hederifolium*. Willd. Ait. Sm. *C. Europæum*. Fl. Brit. With. E.) On a steep bank in the parish of Bramfield, Suffolk. Mr. D. E. Davy. Woods at Stackpole Court, Pembrokeshire. Mr. Milne. Bot. Guide. At Langar, near the seat of Earl Howe, Nottinghamshire. Mr. Gregory. ditto. Abundant in a wood at Alderdown Farm, Sandhurst, Kent. Mr. W. Ross, in Linn. Tr. v. xiii. 616. E.) Mr. Woodward assures me it has lately been found wild in Suffolk; and Gerard mentions it as growing in Wales, Lincolnshire, and Somersetshire. P. April—May.†

* (Supposed from the root being round, as κυκλος, a circle. E.)

† (That the root of this plant in a recent state, (for when dried it is said to lose such properties), is powerfully pungent and acrid, cannot be doubted; though its precise

MENYANTHES.* Bloss. fringed : Nect. five, at the base of the germen : Summit bi-partite : Caps. one-celled.

M. NYMPHÆOIDES. Leaves heart-shaped, very entire, waved : blossom segments bordered, fringed above.

Hook. Fl. Lond. 164—*E. Bot.* 217—*Fl. Dan.* 339—*Tourn.* 67—*J. B.* iii. 772. 1—*Pet.* 71. 4.

(Stems extending several feet, branched. Leaves floating, heart-shaped at the base, rounded at the end ; sometimes spotted. Blossom yellow, axillary, more than an inch in diameter, disk radiating. Summit deciduous. —When the fructification is completed, the stem, which rose many feet in order to support the flower above the surface of the water, sinks beneath it ; there remaining till the next flowering season, when it resumes its annual task. T. T. E.)

FRINGED WATER LILY. FRINGED BUCKBEAN. (*Villarsia nymphoides.* Vent. De Cand. Hook. E.) Large ditches and slow streams. Lake at Castle Howard, Yorkshire. Teesdale ; brought thither from near York, by Mr. Teesdale. (Sir T. G. Cullum, Bart. in Eng. Fl.), and not further north ; also under similar circumstances in the ponds at Wallington, Northumberland. Mr. Winch. E.) In the Isis near Oxford ; particularly at Ferry Hinksey. Mr. Butt. Found by Lord Lewisham in the Thames near Walton Bridge. E. Bot. (In the Thames at Ankerwick, near Windsor. Rev. Dr. Goodenough, in Bot. Guide. Datchet Common, plentiful. Mr. Gotohed. In the Cam below Cambridge Fens, near Ely ; Littleport and Old Bedford River. Relhan. Pond in London Fields, Hackney. Mr. J. Woods, jun. Bot. Guide. Ponds on Wands-worth Common. Mr. W. Christy. Wisbech river, a little before entering that town from Downham. Dr. Skrimshire. ditto. In the Nene at Peterborough, plentifully. Morton. In the back water of the Ouse at Hemingford, Huntingdonshire. E.) P. July—Aug.†

M. TRIFOLIATA. Leaves ternate : blossom segments entire at the edge, shaggy on the upper surface.

Curt. 240—(*E. Bot.* 495. E.)—*Fl. Dan.* 541—*Blackw.* 474—*Woodv.* 5—*Ger.* 1024. 1 and 2—*Dod.* 580—*Job. Obs.* 496. 2—*Ger. Em.* 1194—*Park.* 1212—*H. Or.* xv. 2. row 2, 1st figure on the left hand.

(Root blackish. Stems ascending, leafy. E.) Leaves spear-egg-shaped. Blossom pinky and white, forming a spike-like bunch, with a floral-leaf at the base of each pedicle. One of the most beautiful of our native flowers.

medicinal virtues have never been satisfactorily ascertained. How far the tender solicitude of Father Gerard, especially for the ladies *enccinte*, may be received with becoming gratitude by the present sceptical generation, we know not ; but the above authority warns us not even to “ come neere unto it, or stride over the same where it groweth, for the naturall attractive vertue therein contained is such, that without controversie they that attempt it in manner above said, shall be delivered before their time ; which danger and inconvenience to avoide, I have, (about the place where it groweth in my garden), fastened stickes in the ground, and some other stickes I have fastened also crossewaies over them, least any woman should by lamentable experiment finde my wordes to be true, by their stepping over the same.” E.)

* (From *μην*, a month ; and *αλος*, a flower, as continuing a month in blossom. E.)

† (In Japan the leaves are salted, and become a very glutinous substance ; it is used in soup, boiled in which it becomes tender. Kempfer. E.)

WATER TREFOIL. MARSH CLOVER. (COMMON OR TREFOIL BUCK-BEAN, or BOG-BEAN. Irish: *Pachran*. Welsh: *Ffuen y gors teirdalen*. Gaelic: *An-tri-bhsleach*. E.) Ponds and pits frequent. In the larger bog on Hampstead Heath, Middlesex. Mr. Bliss in Park's Hampstead. In Anglesey. Welsh Bot. Duddingston Loch, and Braid Hills. Greville. In a watery ditch surrounding Hatfield Barrow, near Marden, Wilts. Mr. Norris. (Abundant in pits near Ranton Abbey, Staffordshire. E.)

P. June—July. •

HOTTONIA.† *Bloss.* salver-shaped: *Stam.* fixed to the top of the tube: *Summit* globose: *Caps.* one-celled, quinque-dentate.

H. PALUSTRIS. (Stalks solitary, many-flowered: peduncles verticillate. E.)

Nicks. H. S.—*Curt.* i. 4—(E. Bot. 364. E.)—*Fl. Dan.* 487—*Matth.* 1168—*Dod.* 584. 2 and 3—*Lob. Obs.* 460. 2—*Ger. Em.* 826. 1 and 2—*Park.* 1256. 4—*Ger.* 678. 1—*Gisek.* 43.

Foliage entirely under water, as in *Myriophyllum*. *Spike* of the flowers alone rising above, (in a lofty pyramidal form. E.) Some flowers have six stamens, when the cup and the blossom are divided into six segments. (*Leaves* crowded, three or four inches long, bright green, deeply pinnatifid. E.) Whether we consider the lightness of its elegantly winged leaves, or its whorled spikes of lilac-coloured blossoms, it is certainly superior in beauty to most of our indigenous plants.

(Mr. Hanbury has observed a beautiful variety with rose-coloured blossoms. Fl. Brit. and in Bot. Guide a similar discovery is announced by Mr. Rudge, near Kelmarsh, Northamptonshire. E.)

WATER VIOLET. WATER YARROW or FEATHERFOIL. (Welsh: *Gwythdydd y gors*. E.) Ponds and ditches. Several places near Stratford,

* This beautiful plant is worthy of being introduced with *Nymphaea*, *Nuphar*, *Hottonia*, &c. in the ornamental aquarium, destined for the reception of Chinese (gold and silver) ps; and merits the eulogium of the poet,

“ Oft where the stream meandering glides,
Our beauteous *Nymphaea* hides •

Her clustering, fringed flowers;
Nor mid the garden's sheltering care,
Of fan'd exotics rich and rare,
Purple or roseate, brown or fair,

A plant more lovely towers.” S. H. E.)

An infusion of the leaves is extremely bitter and sudorific. It is prescribed in rheumatisms and dropsies. A flum of them in powder proves drastic and emetic. It is occasionally given to destroy worms. In a scarcity of hops this plant is used in the north of Europe to bitter the ale: two ounces are equal to a pound of hops. The dried leaves are sometimes smoked. The powdered roots have been used in Lapland as a substitute for bread, but they are unpalatable. (Of the various miserable expedients for supporting life in the desolate regions of the north, this surely must be one of the most disagreeable, and can only be reconciled by the old adage,

“ Quodque aliis cibus est, aliis fuit acre venenum” E.)

It has been said that it cures sheep of the rot; but from the Upsal experiments it appears that, though goats eat it, sheep seldom do. Cows, horses, and swine refuse it. (Dr. Lewis considers it an efficacious aperient and deobstruent. It has gained reputation in scorbutic disorders, a pint a day of infusion of the leaves removing inveterate cataneous eruptions. E.)

† (In honour of Peter HOTTON, Professor of Botany at Leyden. E.)

Essex. Mr. Jones. Between Ormskirk and Liverpool. Dr. Stokes. Road-sides from Lichfield to Barton under Needwood. Mr. Pitt. Ditches, Suffolk, frequent. Mr. Woodward. In a pit by the foot-road from Wellington in Shropshire, to Leegomery. (Crosby, near Liverpool; also about Bootle and Formby in the same neighbourhood. Dr. Bostock. In Purbeck, and about Wareham and Poole. Pulteney. In ditches near Darlington. Rev. . . Harriman. In Mainsforth Carr, near Rushyford, Durham. Winch Guide. In dykes at Ham Ponds, Kent. Mr. G. E. Smith. Ditches in Corsddygai, &c. Anglesey. Welsh Bot. In a pond near the south-west corner of Nottingham meadows; also at Lenton and Clifton, Notts. E.) P. June—July.

LYSIMACHIA.* Bloss. wheel-shaped: Caps. globular, pointed, of one cell, ten valves, and many seeds.

(1) *Fruit-stalks many-flowered.*

L. VULGARIS. Panicles terminal: (leaves egg-spear-shaped, acute, ter or quaternate. E.)

Curt. 288—(*E. Bot.* 761. E.)—*Blackw.* 278—*Kniph.* 7—*Chis.* ii. 50. 2—*Dod.* 84—*Ger. Em.* 474. 1—*Park.* 544. 1—*H. Ox.* v. 10. 14—*Matth.* 949—*Fl. Dan.* 689—*Fuchs.* 492—*Trag.* 183.

(Two or three feet high, upright, angular, leafy. Leaves smooth, or downy, in pairs or in threes, nearly sessile, spear-shaped, waved at the edge. Calyx and blossom sometimes with six divisions. Filaments broad and united at the base into a cylinder inclosing the germen. Flowers yellow, (large, an inch over. E.)

YELLOW LOOSESTRIFE. (Welsh: *Trewynyn cyffredin.* E.) Banks of rivers and shady marshes, (of common occurrence in the south, but rare in the north of England. E.) By the side of the Avon at Pershore. Mr. Ballard. Moist situations in Hampshire, common. Mr. Pitt. (Below Bidford Grange, opposite the flood-gates on the Avon. Purton. Near Crosby, in the neighbourhood of Liverpool. Dr. Bostock. Bottom of Bath Hills, near Bungay; and frequent in the Fens of Suffolk and Cambridgeshire. Mr. Woodward. In Purbeck; about New Bridge, between Wimbourne and Ringwood; by the river side between Blandford and Durweston; and about Rushton. Pulteney. By the Drop Well, near Darlington. Winch Guide. By the Mole at Brockham. Mr. Winch. Llyp-traffwl, Anglesey. Welsh Bot. Castle Loch, at Lochmaben, Dumfriesshire. Mr. Maughan. Daldowie. Dr. Brown, in Hook. Scot. Banks of the Ouse, near Hartford. E.) P. July.†

* (The literal meaning is answered by the English name *Loose-strife*, from the power of taming even wild beasts once idly attributed to it; though Pliny refers it to one of Alexander's Generals; or possibly to a King of Sicily, who is said to have first discovered its virtues; but in what those virtues consist, or whether the fable may not rather have been originally applied to some other plant, seems equally problematical. E.)

† (Perhaps a passage in Collin's *Faithful Shepherdess* may tend to elucidate the subject of the preceding Note:

“Yellow *Lysimachus*, to give sweet rest
To the faint shepherd, killing, where it comes,
All busy gnats, and every fly that hums:”

whence the Author of “*Flora Domestica*” infers that “the Romans had good reason to

L. THYRSIFLO'RA. Bunches lateral, axillary, on fruit-stalks.

E. Bot. 176—*Fl. Dan.* 517—*Clus.* 53. 1—*Ger. Em.* 475. 3—*Baier. Epist.* at p. 91, and 162, f. 1—*Clus.* 53. 2—*Park.* 544. 3—*J. B.* ii. 904. 2—*Dod.* 607. 1.

Stem simple, upright, leafy, a foot high. *Leaves* opposite, sessile, spear-shaped, half embracing the stem. *Blossoms* numerous, small, with deep segments and short intervening teeth, yellow, segments with red dots at the end. The number of *stamens*, segments of the cup, and of the blossom, varies from five to eight.

TUFTED LOOSESTRIFE. (Welsh: *Trewynyn sylfflodeuog.* E.) Watery places, rare. (By the side of Loch Lomond; in a bog close to the town of Forfar; and plentiful by the side of a lake four miles east of Forfar. Mr. Mackay. Llyn Llechylched, Anglesey. Mr. Lhwd. Woods near Stockport. Mr. G. Holme. Bot. Guide. Lakely Carr, Yorkshire. Rev. J. Dalton. E.) Marshes and banks of rivers, near King's Langley, Hertfordshire. In a bog near Severus's Hills, York. Dr. White. The bog since drained, it is no longer to be found there. P. June.

(2) *Fruit-stalks single-flowered.*

L. NEM'ORUM. Leaves egg-shaped, acute: flowers solitary, stem trailing; (stamens smooth. E.)

Curt. 328—(*E. Bot.* 527. E.)—*Fl. Dan.* 174—*Clus.* ii. 182. 2—*Lob. Obs.* 248. 2—*Ger. Em.* 618. 4—*Park.* 558. 5—*H. Ox.* v. 26. row 2. 1. 2—*Ger.* 494. 3.

Stem cylindrical (branched, radiating, often reddish, twelve to eighteen inches long. *Leaves* bright green, on foot-stalks, opposite, veiny. E.) *Calyx* segments very slender. *Blossom* yellow, much smaller than the leaves, (fringed with minute hairs. *Stamens* yellow. E.)

YELLOW PIMPERNEL. WOOD LOOSESTRIFE. (Irish: *Luss no Colum Kill.* Welsh: *Trewynyn y goedwig*; *Gwlydd melyn Mair.* E.) Moist woods and shady places. P. May--Aug.

L. NUMMUL'RIA. Leaves somewhat heart-shaped: flowers solitary: stem creeping: (stamens glandular. E.)

(*E. Bot.* 528. E.)—*Ludw.* 148—*Curt.* 149—*Kniph.* 8—*Fl. Dan.* 49—*Blackw.* 542—*Walc.*—*Trag.* 808—*Fuchs.* 401—*J. B.* iii. 371. 1—*Ger.* 505. 2—*Matth.* 1013—*Dod.* 600. 2—*Lob. Obs.* 251. 1—*Ger. Em.* 630. 1—*Park.* 555. 1—*Park.* 555. 1. (6)—*H. Ox.* v. 26. row 1. 1, *Numularia*—*Ger.* 505. 1.

(With a microscope, pedicellate glands may be observed covering the blossom and stamens. Fl. Bfit. E.) *Stem* compressed, one foot or more in length, with four membranous edges. *Calyx* segments spear-shaped. *Blossom* pale yellow, as large as the leaves.

MONEY-WORT. HERB TWOPENCE. CREEPING LOOSESTRIFE. Moist meadows, (and by the sides of small streams. E.) P. June.*

entertain the notion that these flowers put under the yokes of oxen kept them from quarrelling with each other; since the plant, by killing or keeping off flies and other stinging insects, must have relieved them from a great source of irritation." E.)

* (The substringent leaves were recommended by Boerhaave as antiscorbutic, but their efficacy is trifling. E.)

ANAGALLIS.* *Bloss.* wheel-shaped : *Caps.* cut round ; of one cell, and many seeds : (*Stam.* hairy. E.)

A. ARVEN'SIS. Leaves egg-spear-shaped : stem trailing : calyx segments spear-shaped.

(*Stems* branched, quadrangular, three to six inches long. *Flowers* on solitary, axillary, fruit-stalks. E.) *Leaves* dotted underneath, veined ; mostly opposite, sometimes four together. *Fruit-stalk* not twice the length of the leaves. *Filaments* united at the base. *Capsules* marked with five lines, as if the seams of so many valves, but it always separates transversely into two parts. (The most accurate Botanists admit that the following varieties permanently differ only in the colour of their blossoms ; as well, therefore, might the white-flowered be considered a species. E.)

Var. 1. Blossoms scarlet.

(*E. Bot.* 529, but the blossom is incorrectly represented as fringed rather than crenate, as Smith has since remarked. E.)—*Kniph.* 6.—*Curt.* 1. 1.—*Fl. Dan.* 88—*Trag.* 388—*Blackw.* 43—*Fuchs.* 18—*J. B.* iii. 369. 2.—*Dod.* 32. 1—*Lob. Obs.* 247. 2—*Ger. Em.* 617. 1—*Park.* 558. 1—*Walc.*—*H. Ox.* v. 26. row 2. 5—*Matth.* 621—*Ger.* 494. 1.

SCARLET PIMPERNEL. (Irish: *Ruinn Ruish.* Welsh: *Bruthlys gwyrwg* ; *Gwlydd Mair.* E.) Corn-fields, gardens, and sandy places, not uncommon.

Var. 2. Blossoms blue.

Hook. Fl. Lond. 169—*E. Bot.* 1823. E.)—*Blackw.* 274—*Fuchs.* 19—*J. B.* iii. 369. 1—*Clus.* ii. 183. 1—*Dod.* 32. 2—*Lob. Obs.* 248. 1—*Ger. Em.* 617 2—*Matth.* 622.

BLUE PIMPERNEL. *A. cærulea.* Schreb. Gmel. (Abbot. Sm. Hook. E.) Between Stockwell and Camberwell. Hudson. Bredon Hill, in a corn-field at the top of Overbury wood, Worcestershire. Nash. Dawlish, Devonshire, also between Bath and Bradford. Mr. Martyn. (Found among corn at Brington, Huntingdonshire, by Mr. Favell, and removed into his garden, where it remained unchanged several years. Mr. Woodward. In fields at Great Saxham, Suffolk. Mr. Leathes, in *E. Bot.* In corn-fields near Lyminge and around Weston Hanger, Kent. Rev. R. Price, in Sm. Obs. Dunglass, on the Clyde. Mr. Stewart. Banks of the Tay, near Delvine. Mr. Murray, in Hook. Scot. E.)

In Anglesey grows a var. with pale pink flowers. Rev. Hugh Davies.

A. May—Aug.†

Every part of the *Pimpernel* is singularly beautiful, and will amply repay a minute examination.

* (A plant so called ἀνὰ τὰ ἀναγυῖν, from its reviving the spirits. Dioscor. Plin. E.)

† Collected before the flowers expand, *Pimpernel* is useful in epilepsy and melancholia. Powder gr. xx. four times a day. Stoll. (It makes no unpleasant salad, and in some places is used as a common pot-herb. Its medicinal virtues are doubted. Small birds are very fond of the seeds. It closes on the approach of rain, and from its susceptibility has been called the *Shepherd's* or *Poor Man's Weather-glass* : nor has this sensitive property escaped the observation of the *Musa Rustica* :

"'Clos'd is the pink-eyed *Pimpernel* :
"Twill surely ruin. I see, with sorrow,
Our jaunt must be put off to morrow."

"'And *Pimpernel*, whose brilliant flow'r
Closes against the approaching show'r,
Warning the swain to sheltering bow'r
From humid air secure."

A. TENELL'LA. Leaves egg-shaped, rather acute, stalked: stem creeping, striking root at the joints: (summit acute. E.)

Dicks. H. S.—Curt. 187—(E. Bot. 530—Fl. Dun. 1085. E.)—H. Ox. v. 26. row 1. 2—Ger. Em. 630. 3—Park. 554. 2—J. B. iii. 371. 2.

(Stems^o filiform, three or four inches long, branched, slender. E.) Leaves not dotted underneath; egg-shaped, heart-shaped, or circular, small. Fruit-stalks more than twice the length of the leaves. Blossom pale purplish red, each segment marked with seven darker streaks, rather large. (A beautiful little plant, with somewhat the habit of a *Lysimachia*. E.)

PURPLE-FLOWERED MONEYWORT. BOG PIMPERNEL. (Welsh: *Gwlydd Mair y gors*. E.) Wet heaths, meadows, and turfy bogs. In Suffolk, frequent. Mr. Woodward. (Crosby Marsh, Garston, and Green Bank, in the neighbourhood of Liverpool. Dr. Bostock. In Anglesey. Welsh Bot. Over many parts of the Leas at Willesboro' Kent, it extends a rosy carpet, that would arrest the most indifferent eye. Mr. Gerard E. Smith. Peat moss, Talkin Tarn, Cumberland. Hutchinson. Bogs on Hampstead Heath, and at Ken-wood, Middlesex. Mr. Bliss in Park's Hampstead. in Ryhope Dean, near Sunderland. Winch Guide. E.) Tittensor Hills, and Cannock Heath, Staffordshire. Stokes. Upper pool at Soho, near Birmingham, in the turf by the side. Needwood Forest, Staffordshire. (Hunters Bog, King's Park. Mr. Bainbridge. Grev. Edin. E.)

P. July—Aug.—Sept.*

The flowers in finer weather only continue open from about eight A.M. till towards four P.M. Hence distinguished by Linnaeus as one of the *Florae Solares*, admissible in constituting the *Horologium Florae*; (vid. *Hieracium*); the "*Herbas horarum indices*" of Pliny; that

"Trace with mimic art the march of time;"

and thus elegantly alluded to by Felicia Hemans in her

DIAL OF FLOWERS.

"'Twas a lovely thought to mark the hours,
As they floated in light away,
By the opening and the folding flowers,
That laugh to the summer's day.
Thus had each moment its own rich hue
And its graceful cup or bell,
In whose coloured vase might sleep the dew,
Like a pearl in an ocean-shell.
To such sweet signs might the time have flow'd
In a golden current on,
Fre' from the garden, man's first abode,
The glorious guests were gone.
Yet is not life, in its real flight,
Mark'd thus—even thus—on earth,
By the closing of one hope's delight,
And another's gentle birth?
Oh! let us live, so that flower by flower,
Shutting in turn, may leave
A lingerer still for the sunset hour,
A charm for the shaded eve." E.)

* (The Bog Pimpernel, (which occasionally cheers the traveller in his dreary course over the lone heath,)

"Of fairer form and brighter hue
Than many a flower that drinks the dew
Amid the garden's brilliant show,"

AZALEA.* *Bloss.* bell-shaped : *Stam.* inserted on the receptacle : *Caps.* five-celled, many-seeded : (*Summit* obtuse. E.)

A. PROCUMBENS. Branches spreading wide and trailing : (leaves opposite, revolute, very smooth. E.)

(*E. Bot.* 865. E.)—*Linn. Lapp.* 6. 2—*Clus.* i. 75. 3—*J. B.* i. a 527—*Jonst.* 116. 8—*Fl. Dan.* 9—*Penn. Tour in Scotl.* ii. 5. p. 43.

(*Plant* growing in tufts of various sizes. *Stems* (dwarfish,) very woody, leafless below. *Leaves* small, almost like those of thyme, smooth and glossy, rigid, channelled down the middle. *Flowers* corymbose, terminal, rose-coloured. Hook. E.)

TRAILING ROSEBAY. Highland mountains, on dry barren ground, near their summit. Ben Lomond, near the top. Found there first by the Rev. Mr. Stuart, of Luss. Smith. (In abundance on Ben Bourde, on Lochain y Gair, near Invercauld; more sparingly on Ben Lawers, Ben Teakerney, and Malghyrdy. Mr. Brown. On Ben-y-gloe, near Blair Athol. Mr. Winch. E.) S. July.

CONVOLVULUS.† *Bloss.* bell-shaped, plaited : *Nect.* surrounding the base of the germen : *Summits* two : *Caps.* two or three-celled, two seeds in each.

(1) *Stem* twining.

C. ARVEN'SIS. Leaves arrow-shaped, with acute lobes : fruit-stalks generally single-flowered.

Curt. 119. (*E. Bot.* 312. E.)—*Kniph.* 12—*Fl. Dan.* 459—*Walc.*—*Fuchs.* 258—*J. B.* ii. 157—*Trag.* 806—*Ger.* 712. 2—*Clus.* ii. 50. 1—*Dod.* 393—*Lob. Obs.* 340. 2—*Ger. Em.* 861. 2—*Park.* 171. 2—*H. Ox.* 1. 3. 9.

(*Stems* one to three feet long, slender, angular, twisted, often prostrate from want of support. *Leaves* alternate, petiolate, smooth. *Flowers* handsome, nearly an inch over, sometimes yellowish white, but more fre-

furnishes the muse of sentiment with the following reflection :

“ Oh, it is thus, when grief's keen blast
Has o'er the chaste'n'd spirit past,
Till all the future lot seems traced
On sorrow's lone and dreary waste,
She finds unthought-of sweets that bloom
Amid the desert's cheering gloom.

These, lovelier than the fragile flowers
That wave in Joy's luxurious bowers,
Sweet as the bud of Sharon's rose,
Amid the wild their leaves unclose,
And give to heaven's pure gales alone
Perfections to the world unknown.

And thus it is that heaven can bless
The bleak and lonely wilderness;
And thus in Sorrow's lowly state,
Where all seems drear and desolate,
Become the thorny wastes of care,
Amid neglect and ruin, fair.” E.)

* (From *αχαλος*, dry; as preferring an arid soil. E.)

† (Derived from *convolvere*, to twine around; such being the habit of the majority of these plants. E.)

quently pink, varied with white plaits. (*Floral-leaves* very small, distant from the flowers. Fl. Brit. E.)

Var. 2. Leaves arrow-strap-shaped.

Pluk. 24. 3.

Both leaves and flowers smaller.

Between Harleston and Eversden, Cambridgeshire. Ray.

Var. 3. Blossom very small, almost divided to the base.

Near Maidstone. Ray.

SMALL BINDWEED. (Welsh: *Cynghafawg fechan*; *Taglys*. E.) Corn-fields and road-sides, (especially in light, sandy, or calcareous soils. E.)

P. June—July.*

C. SE'PIUM. Leaves arrow-shaped, lobes truncated: fruit-stalk quadrangular, single-flowered.

(*E. Bot.* 313. E.)—*Curt.*—*Fl. Dan.* 458—*Sheldr.* 56—*Blackw.* 38—*Kniph.* 12—*Dod.* 392—*Lob. Obs.* 340. 1—*Ger. Em.* 861. 1—*Park.* 163. 3—*H. Ox.* i. 3. 6—*Ger.* 712. 1—*Fuchs.* 720—*J. B.* ii. 154—*Trag.* 805—*Blair* 4. 3—*Suert.* ii. 14. 8—*Walc.* 5.

(*Stems* climbing many feet. *Leaves* large, smooth, alternate, on leaf-stalks. *Flowers* two inches over, sometimes tinged with pink. E.) *Floral-leaves* two, close to the calyx; in the preceding species at some distance below it. The large size of its fine milk-white blossoms renders it a beautiful ornament to our hedges.

(A var. with blossoms of deep bluish or rose-colour; abundant in a lane leading from Merton, by Earl Spencer's Park, to Wandsworth. Graves. E.)

GREAT BINDWEED. (Welsh: *Cynghafawg, fawr, Tagwydd*. E.) Moist hedges and thickets. P. July—Aug.†

(2) *Stem not twining*

C. SOLDANEL'LA. Leaves kidney-shaped: fruit-stalk one-flowered, (with membranous angles: stems procumbent. E.)

(*E. Bot.* 314. E.)—*Matth.* 469—*Dod.* 395—*Lob. Obs.* 329. 2—*Ger. Em.* 838. 1—*Park.* 168. 2. 6—*H. Ox.* i. 3. 2—*Ger.* 690.

* (However attractive this pretty plant may be to the Botanist or Florist, it is often a most troublesome weed to the Agriculturist, and difficult to eradicate. The root creeps powerfully, and the stems entwine around and choke the plants of corn, pulse, or grass. Perseverance in hoeing, to prevent the young shoots from expanding their leaves, with in one season exhaust the roots, so that a naked summer fallow, with deep ploughing, and careful forking out, will effectually overcome this evil. Essay on Weeds. The process must be followed with perseverance, as the smallest fragment of the root of this species of *Devil's-guts*, (to speak technically to human beings,) will very quickly rise to a perfect plant. These elegant flowers would appear to form a favourite resort for *Thrips Physapus*, a fly which causes intolerable titillation in hot weather. Walking through a wheat-field in July, Messrs. Kirby and Spence observed that all the blossoms of *C. arvensis*, though very numerous, were interiorly turned quite black by the infinite number of these insects, which were courting about within them. E.)

† The inspissated juice of the plant, in doses of twenty or thirty grains, is a drastic aperient. Scammony is a similar preparation from another species of *Convolvulus* so much resembling this that they are with difficulty distinguished. * (Jalap is also a congener. E.) Though an acrid purgative to the human race, it is eaten by hogs in large quantities without detriment. Sheep, goats, and horses eat it. Cows refuse it. (A dangerous plant to introduce in gardens and shrubberies, destroying other vegetables, even shrubs, where it gains an ascendancy, and itself most difficult to extirpate. E.)

(*Seeds* large, angular. *Capsules* roundish. *Flowers* soon falling off after being exposed to the meridian sun. Fl. Brit. E.) *Stems* in open ground short and prostrate, taking a semicircular direction; but among bushes growing to some length unbranched, bearing no flowers. *Leaves* sometimes heart-shaped. *Leaf-stalks* long. Woodw. *Stems* one to two feet long. *Blossoms* few, large, purplish.—At some distance from the sea not above half the usual size, but the plant in other respects the same.

SCOTTISH SCURVY GRASS. SEA BINDWEED. (Welsh: *Cynghafawg arfor*; *Ebolgarn y môr*. E.) Sea shore. Norfolk coast, frequent. Mr. Woodward. Walney Isle. Mr. Dalton. (At Bank Hall, and Garston, in the neighbourhood of Liverpool. Dr. Bostock and Mr. Shepherd. On the coast about Swanage, Poole, and Weymouth. Pulteney. Near Maryport. Rev. J. Harriman. In drifted sand, Anglesey. Welsh Bot. Sandy fields between Troone and Irvine. Mr. M'Nab. Near Ayr. Mr. Murray. Hook. Scot. Teignmouth. Rev. Pike Jones. E.) Near the sea-coast, Cornwall. P. July.*

POLEMONIUM. *Bloss.* wheel-shaped, with five divisions: *Filaments* broad and membranous at the base: *Summit* trifid: *Caps.* three-celled, opening at the top: *Seeds* angular.

P. CÆRULÆUM. *Leaves* winged: *flowers* erect: *calyx* longer than the tube of the blossom: (root fibrous. E.)

E. Bot. 14—*Kniph.* 5—*Tourn.* 61. 1—*Fl. Dan.* 255—*Dod.* 352. 1—*Lob. Obs.* 412. 1—*Ger. Egm.* 1076. 5—*Park.* 123. 12—*J. B.* iii. 212. 2—*Ger.* 918. 5—*Swert.* ii. 28. 3.

(*Stem* upright, two feet high, leafy, bearing panicles. Fl. Brit. E.) *Little leaves* egg-spear-shaped; eleven pair or more on each leaf. *Blossom* blue, sometimes white, (large, deeply five-lobed. E.)

GREEK VALERIAN. JACOB'S-LADDER. (In moist woods and bushy roughs, but rare. E.) Malham Cove, Yorkshire. Ray. And at the Lover's Leap, Buxton. Mr. Wood. Near Bakewell. Mr. Whately.

* (Medicinal qualities as of the preceding. E.) The leaves applied externally are said to diminish dropsical swellings of the feet. The different species furnish nourishment to the *Sphinx Convolvuli* (Unicorn-moth,) and *Phalaena Elpenor*. (The proboscis of the former insect is extremely curious, being long and pliant for the purpose of extracting the grateful food, honey. It is carried rolled up in concentric circles under the chin, and is capable of being extended more than three inches in length. See further illustrative remarks in the "Wonders of the Vegetable Kingdom," p. 58. The premature decadence of the blossom is not peculiar to this species. It affords a no less apposite occasion for reflection, than the more usually cited falling petals of the Rose—"The beautiful evanescent flowers of *Convolvulus*," observes Wiffen, "live but for a day, (when called *Belle-de-Jour* by the French; E.) opening in the morning and ere sun-set closing for ever. This, on account of the profusion of buds, is not generally noticed, and numberless successors take off our attention from the flower which "has lived its little day," and is now no more. How affecting an emblem of human life does this simple *Convolvulus* present to us! The gay, the young, whose existence has seemed but a day, are cut off; and others, equally gay and equally mortal, occupy their places; and, the remembrance of them is quickly dissipated by the attractions of their successors, who, perhaps, like them, are doomed early to submit to the common lot of humanity:

Days on years thus hurry by,
And of the varying present mar or make
A gloom or bliss in Man's eternity." E.)

Gordale, Yorkshire. Mr. Gough. (Near the plantations under the Ochre Pits at Shotover Hill, Oxfordshire. Sibthorp. Near Haddon Hall, Derbyshire. Mr. W. Christy. By the side of the Woodstock road, between the first and second mile-stone from Oxford. Mr. Baxter, in Purt. Arniston woods. Mr. Arnot. Blackford Hill. Mr. Bainbridge. Greiv. Edin. E.) P. June.*

CAMPANULA.† Bloss. bell-shaped: *Filaments* broad and arched at the base: *Summit* trifid: *Caps.* beneath; three or five-celled; opening by three lateral orifices.

(1) *Leaves smoother and narrower.*

C. ROTUNDIFOLIA. Root-leaves kidney or heart-shaped: stem-leaves strap-shaped, very entire.

Curt. 226—(E. Bot. 866. E.)—Fl. Dan. 1086—Walc.—Clus. ii. 173—Dod. 167—Lob. Obs. 178. 1—Ger. Em. 452. 3—Park. 651. 1—H. Ox. v. 2. 17—J. B. ii. 810. 1, and 796—Ger. 367. 3—Allion. 47. 2.

(Root rather woody. E.) Unless the root-leaves be carefully searched for, they will scarcely be observed, and then the plant may be mistaken for *C. patula*. Stem round and smooth (slender, a span high. E.) Root-leaves sometimes entire, sometimes notched, varying from kidney to heart-shaped. Stem-leaves varying from strap-spear-shaped to thread-shaped, and the broader ones occasionally with a few serratures. Blossom blue, purple, or white, (in a lax, drooping panicle. E.)

(The radical leaves soon wither, and thus this part of the specific character is often wanting. Hook.

The single flowered variety, found on the hill of Monteith near Perth, as also on Skiddaw, and conjectured to be *C. uniflora*, Linn. is considered by Smith to be merely of more humble growth and fewer flowers from its barren situation. E.)

ROUND-LEAVED BELL FLOWER. (HEATH-BELL. WITCH'S THIMBLE. Welsh: *Cly-chlys amryddail*. Gaelic: *Curachd-na-cw'aig*. E.) Heaths, road-sides, and hedge banks, barren pastures, mostly in a dry soil. P. Aug.—Oct.‡

C. PATULA. Leaves stiff and straight: root-leaves spear-egg-shaped: panicle spreading: (calyx minutely denticulate. E.)

(Hook. Fl. Lond. 51. E.)—E. Bot. 42—Dill. 58. 68—Fl. Dan. 373.

Stem erect, two feet high, with five angles and five flat sides, roughish with short hairs, containing a milky juice. Leaves sometimes toothed,

* (Commonly admitted into gardens; where both the flowers and foliage become variegated. E.)

† (A Latin word, signifying a little bell, which the blossom resembles in figure. E.)

‡ (Indicative of an extremely barren soil. Sinclair. Sometimes denominated *Hare-bell* in Scotland; as by one of the most fascinating of her modern poets, in describing the fairy footsteps of Ellen:

“E'en the light *Hare-bell* raised its head,
Elastic, from her airy tread.”

An exquisite passage, for which we can only find a parallel in Milton's Song of Sabrina,

“Thus I set my printless feet
O'er the Cowslip's velvet head,
That bends not as I tread.” E.)

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sometimes finely serrated. *Cup* segments towards the base serrated with minute teeth, but my specimens do not show the livid tooth on each side the base mentioned by Linnæus. *Blossom* conical, larger, more of a reddish purple than in the preceding species, more expanded at the mouth, segments recurved, and each marked with three lines. Whether the plant be in flower or not, these observations are sufficient to discriminate it from *C. rotundifolia*. (Well marked by its panicked inflorescence, and veined, spreading corolla: radical leaves quickly withering and falling off, as in the preceding species. Hook. E.)

(Var. 2. *Flore albo*. White-flowered. Allesley, near Coventry. Rev. W. T. Bree, in Part. E.)

(SPREADING BELL FLOWER. E.) Woods, hedges, corn-fields and road sides, in a moist soil (but rare. E.) Borders of Buddon Wood, near Loughborough; between Lichfield and Meriden; and about Worcester. Hudson. Malvern. Nash. Near the Bath at Lichfield; and on the road to Coleshill. Mr. Woodward. On the road side in a wet lane in the village of Water-Orton, Warwickshire. Near Hagley on the Kidderminster road, plentiful. (On the left hand side of the Meriden road, about six miles from Birmingham.—Frequent in the neighbourhood of Crickhowell, Brecknockshire. Rev. T. Butt, in Bot. Guide. In the woods above Corfe Mullein; and lanes near Merly. Rev. Sir H. Parker, ditto. Near Holt, in the way to Bingham, Norfolk. Rev. R. B. Francis, ditto. Montford Bridge bank, Shropshire; Ceynham Camp, near Ludlow. Dr. Evans, ditto. Banks bordering the road to Castle Cary, not two hundred yards from Bewton, Somersetshire. Maton, ditto. In the park at Cobham. Smith. E.) B. July—Aug.*

C. RAPUN'CULUS. Leaves wavy, crenate, roughish: root-leaves spear-oval: panicle compact: (calyx entire. E.)

(Hook. Fl. Lond. 80. E.)—Fl. Dan. 855—E. Bot. 283—Kniph. 11—Dod. 165. 1—Lob. Obs. 178. 2—Ger. Em. 453—Park. 648. 1—H. Ox. v. 2. 13—Fuchs. 214—J. B. ii. 795—Ger. 369. 2—Trag. 727.

(Root fusiform, milky, rather pungent; when cultivated milder. Stem two to three feet high. E.) Fruit-stalks generally growing by threes, the middle one the longest. Linn. Resembles *C. patula* in the roughness of its angular stem, its milky juice, the size of its blossoms, and the three lines on their segments, but may be distinguished from it by the flowers and fruit-stalks being nearly upright, not expanding; by the segments of the calyx being bristle-shaped, not spear-shaped; and by the stipulae on the fruit-stalks being very slender and half the length of the fruit-stalk, whilst in *C. patula* they are spear-shaped and short. Blossom, purplish blue, sometimes very pale.

RAMPIONS. (RAMPION BELL FLOWER. Welsh: *Clychlys erfynwruidd*; *neu bwyttadwy*. E.) Hedge-banks, fallow fields. Old Buckenham Castle, Norfolk. Mr. Pitchford. Hindlip, Worcestershire. Stokes. Envil, Staffordshire. (Hedges between Bexley and Dartford Heath. Mr. E. Forster, jun. in Bot. Guide. In Enfield church-yard. Mr. T. F. Forster, jun. ditto. About Beddington, Surry. Mr. Borrer; and on Duppa's Hill, by Croydon. Mr. S. Woods, ditto. Hedges at Wressle, near Howden. Rev. Archdeacon Pierson, ditto. Near the gate-house of Baron-hill,

(The herbage, though bitter and milky, is often eaten by cattle. Smith. E.)

Anglesey. Welsh Bot. On a bank near the windmill at the north entrance of Dereham, Norfolk. Rev. R. B. Francis, in Fl. Lond. Near Guy's Cliff, and by the road side near Leamington, leading to Warwick. Perry. E.) B. July—Aug.*

C. PERSICIFOLIA. Leaves smooth, slightly serrated; radical ones obovate; those of the stem linear-lanceolate, sessile, remote: stem cylindrical, very smooth, with few flowers.

Fl. Dan. 1087—Bull. Fr. t. 367—Ger. Em. 451—Lob. Ic. 327—Clus. v. 2. 171.

Stems one and a half to two feet high, pale, more or less leafy. Flowers very large, an inch over, blue, erect. Calyx segments lanceolate, entire, smooth, and even.

PEACH-LEAVED BELL FLOWER. Woods in Scotland. Gathered by Mr. G. Don near Cullen, apparently indigenous. Hook. Scot. Sm. Eng. Fl. E.) P. July.†

(2) *Leaves rougher and broader.*

C. LATIFOLIA. Leaves egg-spear-shaped: stem unbranched, cylindrical: flowers solitary, on fruit-stalks: fruit pendulous.

E. Bot. 302—Fl. Dan. 782 (85. E.)—Clus. ii. 172. 1—Ger. Em. 448. 3—Park. 643. 1—H. Ox. v. 3. 27.

Sometimes four feet high, and very strong in its growth. Stem smooth. Leaves either spear-shaped or egg-spear-shaped, almost sessile, rough with hairs, irregularly serrated. Flowers erect, but the fruit-stalk when ripe bent downwards; and the calyx becomes large and globular at the base from the distension of the inclosed capsule. Blossom blue or pale red. (It varies with a spreading panicle and smoother leaves. Sm. E.)

(Var. 2. *Flore albo*. White flowered. Allesley, near Coventry. Rev. W. T. Brec, in Purt. E.)

BROAD-LEAVED BELL FLOWER. GIANT THROATWORT. Thickets and hedges. Mountainous parts of the northern counties. Ray. (Woods at Newbiggin; and High-gate, Graystock, Cumberland. Hutchinson. E.) Clayey parts of Suffolk. Woodward. Woods about Manchester. Mr. Caley. (Dick Brook foot-bridge, near Stourport. Mrs. Gardner, in Purt. Colinton and Roslin woods. Maughan, in Grev. Edin. On banks of marl at Burton, one mile south of Stafford. On the road from Hales Owen Abbey to Birmingham, a mile from the former, on a shivery sand rock. E.) P. July—Aug.‡

* The roots are eaten raw in salads, or boiled like asparagus. In gardens they are blanched.

† (In gardens the flowers are often double, white, and more numerous than in the wild state. E.)

‡ The beauty of its flowers frequently procures it a place in our gardens. (Sir Walter Scott, in his poem of Rokeby, describes this

————— "throatwort with its azure bell,"

as adorning the banks of the Greta, where it divides the manors of Brignell and Scargill. E.) The whole plant abounds with a milky liquor. Horses, sheep, and goats eat it. The young shoots, stripped of the skin, are boiled and eaten as greens about Kendal. Mr. Gough.

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(*C. RAPUNCULOIDES*. Leaves heart-spear-shaped: stem branched: flowers scattered, pointing one way, nutant: calyx reflexed.

E. Bot. 1369—*H. Ox.* v. 2. t. 3. f. 32.

Stem upright, one to two feet high, branched upwards, leafy, cylindrical, slightly hairy, hairs stiffly reflexed. *Leaves* unequally serrated, rough; the lower ones having leaf-stalks, the upper ones sessile. *Blossom* the size of that of *C. rapunculus*, blue. *Calyx* rough; segments spear-shaped, very entire.

CREeping BELL FLOWER. A very rare plant; discovered at Blair, in Scotland, by Fenwick Skrimshire, M.D. In some woods in Oxfordshire, among Yew Trees. *Herb. Buddl. Fl. Brit.* Corn-fields two miles north-west of Kirkcaldy, where it is considered a troublesome weed. Mr. Chalmers, in *Hook. Scot.* [In Sept. 1820, said to have been found by the Rev. G. H. Piercy, near Kildernminster, in a lane near Shrawley Wood. Purton. E.] P. Aug. E.)

C. TRACHELIUM. Stem angular: leaves on leaf-stalks: calyx fringed: fruit-stalks trifid, (axillary, with few flowers. E.)

Hook. Fl. Lond. 109.—*Fl. Dan.* 1026—*E. Bot.* 12—*Chus.* ii. 170. 2—*Dod.* 164. 1—*Lob. Obs.* 176. 2—*Ger. Em.* 448. n. 1—*Ger.* 364. 1—*Fuchs.* 432—*Trag.* 927—*J. B.* ii. 805. 2—*H. Ox.* v. 3. 28—*Swert.* ii. 16. 4.

(*Root* woody. E.) *Stem* two to three feet high, hairy and membranous at the angles. *Leaves* heart-spear-shaped, upper ones sessile, lower ones on leaf-stalks, (hispid, much resembling those of Nettles. E.) Mr. Woodward has sometimes observed two flowers on a fruit-stalk in *C. latifolia*, and only one on *C. trachelium*, and Dr. Stokes has found the calyx in the latter almost without hairs, as represented in *E. Bot.* 12; so that the Linnæan characters are hardly sufficient in all cases to discriminate these two species; but the membranous angles of the stem, and the different heart-spear-shaped leaves of *C. trachelium* are at all times sufficient to distinguish it from *C. latifolia*. *Blossom* large, hairy within; blue, sometimes pale red or white; not unfrequently double, and when this is the case the stamens and nectaries are wanting. (*Juice* dull yellow. E.)

GREAT THROATWORT.* **CANTERBURY BELL.** **NETTLE-LEAVED BELL FLOWER.** (Welsh: *Clychlys dynad-ddail.* E.) Woods and hedges. (About Painswick. Mr. O. Roberts. About Abbey Milton, Cranbourne Chase; Shaftesbury; and Lulworth, in Dorset. Pulteney. About Rochester and Dorking. Mr. Winch. In the Old Park near Beaumaris. Welsh Bot. On the walls of Mugdoch Castle. Hopkirk, in Hook. Scot. Frequent in the neighbourhood of Canterbury, Dover, and other parts of Kent. E.) P. July—Aug.†

C. GLOMERATA. Stem angular, not branched: flowers sessile; mostly terminal: (leaves ovate, crenate. E.)

(*Hook. Fl. Lond.* 146. E.)—*E. Bot.* 90—*J. B.* ii. 801. 2—*Chus.* ii. 171. 1—*Dod.* 164. 2—*Lob. Obs.* 176. 3—*Ger. Em.* 449. 4—*Park.* 644, fig. 4th—*H. Ox.* v. 4. 40 and 43—*Herm. Par.* 235—*Thal.* 8. 2—*Burr.* 523. 3.

* (In reference to its imaginary use for complaints of the neck or throat: the Latin specific name is derived from *τραχηλος* the throat. Probably founded on nothing better than the fallacious *inductio analogica*, by which, in the absence of scientific investigation, the qualities of plants were divined from a fancied resemblance of certain parts to those of the human frame to which they were applicable. E.)

† (Frequently admitted into gardens, and especially admired with double flowers, either white, blue, or purple. E.)

Leaves egg-oblong, sessile, bluntish. One flower in the bosom of each of the three upper leaves, the others forming a terminal cluster. Linn. (*Root* branched, fibrous. *Stem* varying in height from one to eighteen inches, more commonly attaining towards the latter standard, hoary with deflexed hairs. (*Leaves* hoary, upper ones more acute, amplexicaul. E.) The lower leaves on the larger plants on long leaf-stalks, and sometimes heart-shaped at the base. *Calyx* segments hairy, sometimes toothed. *Blossom* (erect, one third the size of the last, E.) blue, or white; not unfrequently both on the same plant; hairy within. *Stamens* either four or five. *Style* long, woolly, slightly cloven either into two or three, fleshy, villose, spear-shaped summits.

In the humid climate of Kendal, Mr. Gough has observed this species two feet high, with a trailing stem, green, and but little hairy. I have gathered it when growing on a high and very dry soil, as on the summit of Aston Down in the Isle of Wight, only from one to two inches high, (see Pl. 11. f. 8.) when it can scarcely be said to have a stem, and bears only one or two flowers, with four stamens and frequently but two summits. Mr. Watt brought me a series of specimens from the Isle of Wight from one to ten inches high, and Mr. Turner informs me that on barren limestone hills in Norfolk it is equally diminutive; though the blossom, as he observes, is as large as in the largest specimens. E.)

CLUSTERED BELL-FLOWER. Mountains and chalky pastures. Near Pontefract. Mr. T. F. Hill. Chalk Hills, in Norfolk. Mr. Woodward; and Surry; and between Grantham and Wilham Common. Stokes. On the Fife and Angus coasts, not unfrequent. Mr. Brown. (Close to Stonehenge, on Salisbury Plain, very diminutive. Mr. Caley. Common on the chalky hills, and pastures of Dorset. Pulteney. Hills, woods, and road sides, about Painswick. Mr. O. Roberts. On the banks of the Tyne, near Wylam, and near St. Oswald's and Chollerford, Northumberland; in woods at Cocken, Durham. Mr. Winch. Above Roll's-wood, on the side of the road to Grafton. Purton. Road side between Aldsworth and Bibury, Oxon. Mr. Frederick Russell. Bembridge, Isle of Wight. Dr. Bostock. Links, near Gosford. Maughan, in Grev. Edin. E.) P. July.

(3) *Capsules covered by the reflexed segments of the calyx.*

C. HEDERA'CEA. *Leaves* heart-shaped, five-lobed, on leaf-stalks, smooth: (stem feeble, much branched, procumbent. E.)

Dicks. H. S.—(*Hook. Fl. Lond.* 93. E.)—*E. Bot.* 73—*J. B.* ii. 797—*H. Ox.* v. 2. 18—*Pluk.* 23. 1—*Pet. Gaz.* 51. 2—*Fl. Dan.* 330.

Stems thread-shaped, trailing, matted together, in patches of a foot diameter. Watt. *Lower-leaves* heart or kidney-shaped, nearly entire. Woodw. *Leaves* with five to eight teeth, but not properly lobed. Stackh. The delicacy and transparency of this elegant little plant sufficiently separate it from all our other species. *Blossoms* pale blue, (half an inch long, terminal, solitary, on long, slender peduncles, more or less pendulous. E.)

IVY-LEAVED BELL-FLOWER. Moist shady places. About springs and rivulets in Cornwall, frequent. Mr. Watt. Woods in Oxfordshire. Mr. Newberry. Roxborough Common, near Plymouth, plentiful. Mr. Knappe. (On Whalebridge Common, near Linfield, Sussex. Mr. Borrer, in Bot. Guide. On the side of the great bog leading from Eridge Rocks to Grobbridge. Mr. Forster; and Fairlight Common,

near Hastings. Mr. J. Woods, jun. ditto. In a small swampy place on Maiden Down, opposite the Maidenhead Inn, Somersetshire. Mr. Sole. On the bogs of Haldon and Dartmoor, Devon. Rev. Pike Jones. In the Scilly Islands. Hooker. On the lawns of Ardgowan. Mr. A. Edgar. Abundant in the immediate neighbourhood of Greenock. Mr. M'Dermid. Hook. Sept. By the side of the path leading down to Rhyader y Wenol, (the Swallow's Cataract,) a fall of the Llygwy, between Capel Curig and Bettws, North Wales. E.) P. May—Aug.

(4) *Capsules prism-shaped.*

C. HYBRIDA. Stem stiff and straight, somewhat branched at the base: leaves oblong, scolloped: calyx longer than the blossom.

(E. Bot. 375. E.)—Ger. Em. 439. 2—Park. 1331. 2—H. Ox. v. 2. 22.

(About a span high, rough with minute hairs. E.) Calyx segments permanent, crowning the ripe capsule. Woodw. Blossoms (few, terminal, solitary, E.), purple, deeply divided. The great length of the capsule, and the segments of the calyx reaching above the top of the blossom, at once distinguish this from every other British *Campanula*.*

(Smith observes that *C. speculum* is scarcely different, unless from its larger blossom, and more branched stem. E.)

CORN BELL-FLOWER. (*Speculum Veneris minus*. Ger. Em. E.) Chalky corn-fields. Bury and elsewhere in Suffolk, in chalky corn-fields. Mr. Woodward. (Broomfield Essex. Mr. W. Christy. About Dorking. Mr. Winch. In corn-fields near the school, Rugby. Baxter, in Purts. Sunderland Ballast Hills. Mr. W. Weighell. Winch Guide. E.)

A. July—Aug.†

PHYTEUMA. Bloss. wheel-shaped, with five strap-shaped, deep, segments: *Summits* two or three-cleft: *Caps.* two or three-celled; bursting laterally.

P. ORBICULARE. Flowers in a globular head: floral-leaves spear-strap-shaped, fringed.

Dicks. H. S.—(Hook. Fl. Lond. 55. E.)—E. Bot. 142—Jacq. Austr. 437—Col. Ecphr. 224—Barr. 525—Riv. Men. 109. 1—H. Ox. v. 5. 47—Ger. Em. 455. 5.

(Root long and woody. Herb milky, not acrid. Stems solitary, undivided, leafy, about a foot high. All the leaves on long stalks. Bloss. brilliant deep blue, numerous. Sm. E.)

(A variety with white blossoms is recorded by Pulteney as growing about Buriton, in Hampshire. E.)

ROUND-HEADED RAMPION. Chalky pastures. Downs of Sussex and Hampshire. Near Leatherhead. (About Dorking. Mr. Winch. E.)

P. July—Aug.

* Linnaeus had good reason for considering this as a plant having no very permanent character; for Mr. Robson, having sown it in his garden, raised plenty of luxuriant plants, which ripened their seeds; but these seeds the following year produced plants, the greater number of which were *C. speculum*, and the rest an intermediate plant with smaller flowers than the latter, but larger than the former.

† *Phalena exsoleta*, (and *Heriades Campularum*, E.) feed upon the different species.

LOBELIA.* *Cal.* five-cleft: *Bloss.* one petal, irregular, divided lengthwise on the back: *Anthers* united into a tube: *Caps.* two or three-celled.

L. DORTMANNA. Leaves strap-shaped, very entire, containing two longitudinal cells: stem almost naked.

Dicks. H. S.—(*Hook. Fl. Lond.* 157. E.)—*E. Bot.* 140—*Fl. Dan.* 39—*Lightf.* 21. at p. 505—*Clus. Cur.* 40—*Parh.* 1250—*Pet.* 67. 7.

Whole plant, even the leaves beneath the water, lactescent. Root fibrous; fibres numerous, hair-like. Stem upright, cylindrical, hollow, smooth, twelve to eighteen inches high, naked, except three or four oval sessile scales, about a quarter of an inch long. Leaves in a circle at the bottom of the water, numerous, about two inches long, reflexed at the end with an elegant curve, smooth, green, composed of two hollow, parallel, tubes. Flowers as many as nine in a loose bunch, rising above the water, from one half to once inch asunder. Fruit stalks slender, about half an inch long; from the bottom of a flower-scale. Flower-scales similar to the scales on the stem. *Calyx* divided into five strap-shaped segments. Blossom, (bearded at the mouth, E.), pale blue, three quarters of an inch long; upper lip upright; lower, segments oval, reflexed, the middlemost the largest and longest. Woodw.

CARDINAL-FLOWER. (Welsh: *Bidawglys dyfrdreg.* E.) Lakes in Wales, Westmoreland, Cumberland, and Scotland. Coniston Water and Winandermere. Mr. Woodward. Loch Lomond Dr. Hope. (White Meer, near Ellesmere, and about Llyn Idwall and Llyn Ogwen, between Capel Curig and Bangor, North Wales. Mr. Griffith. Bomere Pool, near Shrewsbury. Dr. Evans, in Bot. Guide. Derwentwater. Mr. Winch. In the lake near the Inn at Avimore, North Britain, where *Nuphar pumila* grows in abundance. Hooker. Loch Achray. Miss Collett. Fl. Lond. E.) P. July—Aug.

L. U'BENS. Stem nearly upright: lower leaves roundish, scalloped: the upper spear-shaped, serrated: flowers in terminal bunches.

(*Curt.—F. Bot.* 953. E.)—*Bocc. Rar.* 11. 3—*H. Or.* v. 5. 56.

Stem straight, simple, a foot high, rather bare, the angles rough. Root-leaves elliptical, smooth, bluntish, somewhat toothed; stem-leaves far asunder, sessile, (rather decurrent, E.) shortly serrated, smooth. Clusters erect. Flowers upright, distant. *Calyx* five-cleft, rough; segments awl-shaped, upright. Blossom blue, rough, the palate having two pale blotches; segments of the lower lip spear-shaped, pendent. Linn. Whole plant lactescent, fetid, of a warm taste, and if chewed exciting a pungent sense of burning on the tongue, especially the root.

(**ACRID LOBELIA.** E.) Mountainous meadows, (and bushy heaths in Devon. E.) Shute Common, between Axminster and Honiton. Mr. Newberry. (On the slope of a heath called Kilmington Hill, two miles from Axminster, close to the road. Lord Webb Seymour. This very scarce plant has likewise been found in 1800, by Miss Burgess, near the town of Ottery St. Mary. E. Bot. E.) P. Sept.†

* (In honour of the Flemish physician, Matthias de LOBEL, Botanist to King James I. born 1539; at an early age became enamoured with the love of plants; in 1570 published, (in conjunction with Pena), "*Stupium Adversaria*;" in 1576, "*Observations*;" and was through life a considerable traveller, and a zealous promoter of his favourite science, till his death in 1616. E.)

† (It seems probable that this plant may possess medicinal virtues, at least as worthy of attention as those of the more valued foreign species. E.)

SAMOLUS.* *Bloss.* salver-shaped : *Stamens* protected by the valves of the blossom : *Caps.* one-celled : opening with five valves at the top.

(*S. VAIERAN'DI.* Leaves blunt : raceme of many flowers : (bractæas minute, solitary. E.)

(*Curt. N. E.—E. Bot.* 703. E.)—*Fl. Dan.* 198—*Kniph.* 4—*Curt.* 268—*Lob. Obs.* 249. 1—*Ger. Em.* 620. 3—*Park.* 1237. 5—*J. B.* iii. 792. 1—*H. Ox.* iii. 24, 26, and 28.

(*Calyx* bell-shaped. *Seeds* numerous, angular. *Fl. Brit.* E.) Nearly a foot high. *Leaves* spear-egg-shaped, very entire (alternate, smooth, one to two inches long ; uppermost nearly sessile. E.) Spike-like bunch of flowers two to four inches long. *Blossom* white, small, (with five segments, and a small intervening scale between each. E.)

WATER PIMPERNEL. COMMON BROOKWEED. (Welsh : *Claerlys ; Sammwl.* E.) Marshes and moist meadows. In the large ditches leading from Poplar to the Isle of Dogs, opposite to Greenwich. Mr. Jones. Side of the brook running from the brine pit on Defford Common, Worcestershire. Mr. Ballard. In Bowood Park, near Calne. Dr. Stokes. (In bogs at Willington Quay, and Prestwick Carr, Northumberland : on the coast between Sunderland and Ryhope. Mr. Winch. Southport, near Liverpool ; and Wisbech. Mr. W. Christy. River Alne, above Oversley ; in boggy ground near Bidford Grange. Purton. Anglesey. Welsh Bot. Links, near St. Germans. Mr. D. Stewart, in Grev. Edin. Guillon Links, near Edinburgh. Maughan, in Hook. Scot. E.) Salt marshes about Lymington.

P. June—July.†

LONICERA.‡ *Bloss.* one-petal, tubular, irregular : *Berry* beneath : one to three-celled : many-seeded.

(*L. CAPRIFO'LIUM.* Blossoms ringent, whorled, terminal : leaves deciduous ; the upper ones united at the base, and perfoliate.

Jacq. Austr. T. 357—*E. Bot.* 799—*Cam. Epit.* 713—*Ger. Em.* 891.

Stem woody, twining, and climbing, when supported, to a great height. *Branches* mostly opposite, cylindrical, smooth. *Leaves* almost all confluent at the base, egg-shaped, blunt, very entire, smooth, rather glaucous on the under side ; the upper ones perfoliate, roundish. *Blossoms* two inches long, yellowish, reddish at the base, sweet-scented. *Berries* orange-coloured, crowned with the calyx almost entire. *Fl. Brit.*

PALE PERFOLIATE HONEYSUCKLE. In a wood near Elsfield, Oxfordshire, plentifully. Rev. T. Butt. In Chalk-pit Close Hinton, Cambridgeshire, certainly wild ; also in another coppice in the same parish. Rev. R. Relhan. (Colinton woods, and Corstorphine Hill. Maughan, in Grev. Edin. E.) S. May—June. E.)

* (Diminutive of *Samos*, a Grecian island, in which it is said to abound. E.)

† Dr. Smith observes, with Linnaeus, that the Water Pimpernel is found in almost every part of the globe, and under very different latitudes. We have had occasion to remark that this circumstance, however uncommon with plants, as well as animals, happens to several aquatics. E. Bot.)

‡ (To commemorate Adam LONICER, a physician of Frankfort, and author of a *History of Plants*, who died 1586. E.)

L. PERICLYMENUM. Heads of flowers ovate, imbricated, terminal: leaves distinct, deciduous: blossom ringent.

Curt. 1. 1—(*E. Bot.* 800. *E.*)—*Kniph.* 8—*Fl. Dan.* 908—*Riv.* 122—*Blackw.* 25—*Fuchs.* 646—*Trag.* 822—*J. B.* ii. 104. 1—*Ger.* 743. 1—*Boed.* 411. 1—*Lob. Obs.* 358. 1—*Ger. Em.* 891. 1—*Park.* 1460. 1.

(*Stem* woody, twining, and ascending. *Branches* opposite, cylindrical. *Leaves* opposite, on small leaf-stalks, oval, very entire, often slightly pubescent, glaucous underneath. *Fl.* Brit. *E.*) *Blossom*, (red on the outside, and yellowish within; in some varieties entirely buff-coloured; *E.*) lower segment divided twice as deep as the rest. *Leaves* and stem smooth. *Berries* red, nauseous.

COMMON HONEYSUCKLE: WOODBINE. (Irish: *Duilleir fshlin.* Welsh: *Gwyddfid*; *Llaeth y gaifr.* Gaelic: *An-iadh-shlail.* *E.*) Hedges and thickets. S. May—July.*

* The beauty and fragrance of its flowers render it a pleasing ornament to our gardens, hedges, and arbours,

("O'er-canopied with luscious Woodbine:")

While it aspires to decorate the taller trees with its elegant festoons:

"The Woodbine, who her Elm in marriage meets,
And brings her dowry in surrounding sweets." Churchill.

The leaves are so palatable to goats, that the French have named this plant *Chevre-feuille*, Goat's-leaf. *E.*) Cows and sheep eat it, horses refuse it. *Sphinx Ligustri* and *tipuliformis*; *Phalæna dydactyla* and *hexadactyla*; (and *Limenitis camilla*, *E.*) feed upon it. (Mr. White states that its odoriferous exhalations after dusk attract the *Sphinx ocellata*, a vast moth flying with a humming noise, and inserting its proboscis into the tubular flowers, and extracting their nectar without settling on the plant; thus feeding on the wing in the manner of the humming bird. The same fact is thus described by Mr. Phillips:—"The tubular nectary secures the sweet liquid lying at the bottom from the reach of the industrious bee," (and here again must poetic fiction, however interesting be the illusion, as

"Where the bee
Strays diligent, and with the extracted balm
Of fragrant Woodbine loads his little thigh,"

succumb to sober truth: *E.*) "but the hawk-moth hovers over these flowers in the evening, and with its long tongue extracts the honey from the deepest recess (as do butterflies in the day time, by a like wonderful contrivance, as may more readily be observed. *E.*) Other insects tap the tubes of the flower, by making a puncture near the bottom, and then revel in the luxurious sweet."—Happy the disposition which can derive mental improvement from the contemplation of each varied production of nature; enviable the feeling which can delight to connect with objects so pleasing as flowers the characters of those whom we love. The present subject suggests to the amiable author of the "Wonders of the Vegetable Kingdom," an elegant emblematical compliment to her friend. "Behold yourself,—in the fragrant Woodbine. Its scent may be compared to a fountain of affection, always flowing, always full. It is not the flower of a day, nor does the passing of a cloud occasion any difference; but its sweets continue, and even emit a richer perfume, when the heavy shower is descending." p. 74. Ed. 2.—In the climate of Britain the vegetative season is characterized by three remarkable possessions of the most prevalent and admired gifts of our bounteous Flora. Spring is enlivened by the universally diffused *May*. This is succeeded by wreaths of *Roses*, which as profusely decorate our hedges, fit chaplets for the goddess in her meridian pride: then follow, as tokens of the declining solstice,

"Copious of flowers, the Woodbine pale and wan;
But well compensating her sickly looks
With never cloying odours, early and late." *

* That "the poet's eye" should so rarely condescend to scientific accuracy, is to be re-

Var. 2. Leaves indented.

In the woods of Lord Wodehouse, Norfolk. Mr. Woodward.

(A singular variety is described by M. M. König and Van Hall in the "Bydragen tot de Natuurkund," in which the stamens have been transformed into a second blossom. E.)

L. xylosteum. Fruit-stalks two-flowered: berries distinct: leaves very entire, pubescent.

(*E. Bot.* 916. E.)—*Riv. Mon.* 120—*Fl. Dan.* 808—*Clus.* 58. 1—*Lob. Ic.* 633. 2—*Dod.* 412. 1—*Ger. Em.* 1294. 1.

A shrub six to eight feet high. (Stem upright. E.) Leaves mostly egg-shaped, in opposite pairs, three pairs on each branch; rather soft and cloth-like to the touch. Fruit stalks opposite, axillary. Blossom yellowish, scentless; upper lip four-cleft, lower lip strap-shaped, entire. Filaments woolly. (Berries scarlet, oval, rarely ripening. E.)

UPRIGHT FLY HONEYSUCKLE. Plentiful and certainly wild in a coppice called the Hacketts, to the east of Houghton Bridge, four miles from Arundel. Mr. W. Borrer. In the wood on the south-west side of the lake in Edgbaston Park, near Birmingham, which, however, must be admitted to partake too much of the character of an artificial plantation. *L. Xylosteum*, originally introduced on the authority of Wallis as growing on the rocks of Shewing Shields, Northumberland, though its pretensions to be considered indigenous may be but slender, seems to have become naturalized in Britain. Mr. Winch observed it in hedges south of Alnwick, and in the Cocken woods. E.) S. May.*

JASIONE. Common calyx ten-leaved: Bloss. five petals, (or deep segments. E.), regularly wheel-shaped: Anthers united at the base: Caps. beneath; imperfectly two-celled, many-seeded, opening at the top, crowned by the proper quinque-dentate calyx.

J. MONTANA. Leaves strap-shaped, very entire.

gretted. Milton's error in confounding our plant with a Rose, is rendered the more palpable by an unfortunate epithet:—

"And at my window bid good-morrow,
Through the Sweet-briar, or the Vine,
Or the twisted Eglantine;"

but from such an imputation, even though reiterated by a Botanist, (Curtis), it is especially incumbent on us, who have breathed the same natal air with the great dramatist, to rescue his consistency. The words of Shakspeare are, (not, as misquoted in the above authority,

"So doth the Woodbine, the sweet Honeysuckle
Gently entwine:"

but)

"—— So doth the Woodbine, the sweet Honeysuckle,

[evidently synonymous,]

Gently entwine the Maple." Vid. Warburton. E.)

* In the north of Europe it seems a common plant. Linnæus informs us it makes excellent garden hedges in a dry soil: that the clear parts between the joints of the shoots are used in Sweden as tubes for tobacco pipes, and that the wood, being extremely hard, makes teeth for rakes, &c. (*Lasiobotrys Lonicera*, Grev. Scot. Crypt. 191: "Perithecia even, very crowded, black, the radiating filaments simple," originates beneath the epidermis of the living leaf of the different species. E.)

PENTANDRIA. MONOGYNIA. VERBASCUM. 211

Kniph. 12—*Curt.* 245—(*E. Bot.* 882. E.)—*Fl. Dan.* 319—*Col. Euphr.* 227—*H. Or.* v. 5. 48—*Pet.* 5. 2—*Dod.* 122. 2—*Lob. Obs.* 291. 3. *Ic.* i. 536. 2—*Ger. Em.* 723. 12.

(*Root* tapering, rather woody. E.) *Stem* a foot high or more, clothed with leaves for about one-third of its height; above naked. *Branches* several, from amongst the upper leaves, alternate, much shorter and slenderer than the stem. *Leaves* strap, or strap-spear-shaped, sessile, waved at the edge, hairy, pointing upwards, sometimes, though rarely, with here and there a small tooth. *Woodw.* *Fruit-stalks* naked. *Blossoms* blue, or white, (small, in spherical terminal heads. E.)

Var. 2. *Dwarf.* Whole plant very hairy; when full grown only an inch high.

Sea coast, Cornwall.

HAIRY SHEEP'S SCABIOUS. SHEEP'S-BIT. (Welsh: *Clefyryn.* E.) Sandy and barren meadows and heaths. A. June—July.*

VERBASCUM.† *Bloss.* wheel-shaped, nearly regular: *Caps.* two-celled; two-valved; many-seeded: (*Stamens* declining. E.)

V. THAPSUS. Leaves decurrent, cottony on both sides: stem unbranched: summit globular.

Fl. Dan. 631—(*E. Bot.* 549. E.)—*Woodv.* 125—*Blackw.* 3—*Kniph.* 9.

(*Stem* winged, four to six feet high, leafy, tomentose. *Flowers* in a long, terminal, dense spike. *Blossom* golden yellow; rarely white. *Leaves* alternate, egg-oblong. *Stamens* three, hairy, two longer and glabrous; incorrectly represented in *E. Bot.* as Prof. Hooker observes. E.)

GREAT MULLEIN.‡ Irish: *Cuineail Muir.* Welsh: *Tewbannog*; *Sircyn y melingdd.* E.) Dry ditch banks, in chalky and gravelly soil. B. July. §

Var. 2. *Thapso-nigrum.* Leaves egg-oblong; lower ones on leaf-stalks, middle ones sessile, upper ones decurrent; stem branched; flowers several in each cluster, of which many compose the long spike. *Filaments* partially clothed with purple hairs. *Anthems* orange.

* (The economy of the flowers in this genus is very singular. The florets of the disk have fertile anthers, which are united with each other only at the base, and club-shaped barren hirsute pistils. On the contrary the florets of the circumference, which are furnished with true emarginate stigmas, proper for fertilizing the seeds, have barren stamens; hence the proper stigmas receive the pollen from the club-shaped ones, upon which it is first received, as they pass through the anthers. See Persoon. This is a favourite flower with bees. E.)

† (From *Barbascum*, on account of the bearded or shaggy surface of the leaves in most species, Dr. Hooker conjectures. E.)

‡ (The English generic name *Mullein* has its origin from the French *Molline*, from the softness of the leaves. Hook. E.)

§ Externally emollient, (the flowers yielding an unctuous matter. E.) Dr. Home advises a decoction of it, two ounces to a quart, in diarrhoeas of old standing; he gave a quart every day. *Chm. Exp.* p. 489.. It eases the pains of the intestines; it is used as an injection in tenesmus with advantage; and is often applied externally to hemorrhoids. *Id.* It is said to intoxicate fish so that they may be taken with the hand. In Norway it is given to consumptive cattle, (as also in some parts of England, and hence called *Bullocks' Lungwort.* E.) The down serves for tinder, (and the thick soft leaves are used by the Russian peasantry for socks, in their rigorous winters. E.) Neither cows, goats, sheep, horses, or swine will eat it. (*Noctua Verbasci* frequents this species. E.)

I am indebted to Mr. E. Robson, of Darlington, for this curious hybrid plant; the produce of *V. Thapsus* and *nigrum*.

(Var. 3. Another hybrid variety which Mr. Dawson Turner would call *nigro-lychnitis*, he found near Yarmouth, and describes thus:

"Leaves woolly, and, excepting those of the root, all sessile. Stem about four feet high, throwing out numerous flowering branches which are axillary. Flowers in bunches of about a dozen each, resembling entirely those of *V. nigrum*, and all the stamens purple and woolly. It perfects, no seeds." E.)

V. LYCHNITIS. Leaves wedge-oblong, (denude on the upper surface: stem angular, paniced, branched. E.)

E. Bot. 58—*Kniph.* 6—*Ger.* 631. 1—*Pet.* 62. 4—*Fuchs.* 847—*J. B.* iii. 873. 9—*Matth.* 1147—*Lob. Obs.* 303. 2—*Ger. Em.* 775. 3—*Ger.* 632. 3—*Fl. Dan.* 586.

Stem seldom more than three feet high. Lower leaves of a pleasant green, their upper surface shining. Woodw. (Stem woolly. Leaves cottony underneath, above reticularly veined. Root-leaves attenuating at the base. Stem-leaves egg-shaped, sessile, not decurrent. Fl. Brit. E.) Flowers in terminal and lateral spikes: pale yellow, or cream coloured, (much smaller than in the preceding. E.)

HOARY OR WHITE MULLEIN. Chalky and sandy meadows and pastures, and road sides, Kent. Kinver, Staffordshire, near the Rock Houses. Stokes. Lane leading from the glass-works to the Clyde, Dumbarton. Hopkirk, in Hook. Scot. E.) B. July—Aug.

(Var. 1. *Thapsoides*. Leaves decurrent; stem branched. E.)

Fuchs. 846—*Dod.* 143. 2—*Ger. Em.* 773. 2—*J. B.* iii. 872. 4.

A hybrid plant, from the seeds of *V. Lychnitis*, and the pollen of *V. Thapsoides*. Agérius sent it to J. Bauhine, from whom succeeding authors have copied it. Agrees with *Lychnitis* in its branching stem; its flowers, and also, though less so, in the purple hairs of the filaments; and with *V. Thapsoides* in size, and its leaves, which run down the stem, though not all the way, and which are not so white; in its calyx, which, however, has a longer fruit-stalk, though not so long as in *V. Lychnitis*. It is not a distinct species, but rather a variety of *V. Lychnitis*. Linn.

(*V. Thapsoides*. Linn. With. Ed. 4. E.) Chalky and sandy meadows and pastures, in Kent. Hudson.

(*V. PULVERULENTUM*. Leaves egg-oblong, obscurely serrated, powdered on both sides: stem cylindrical, paniced. Fl. Brit.

E. Bot. 487. E.)—*J. B.* iii. 873. 1.

Stem four to five feet high. Leaves, lower ones somewhat notched; upper ones sometimes embracing the stem, more and more pointed as they ascend. Blossom bright yellow. Woodw. (Stem upright, paniced upwards, pyramidal, many-flowered, much branched. All the leaves sessile. More branched and the blossoms larger than in *V. Lychnitis*. Anthers red. Fl. Brit. E.) Whole plant covered with a meal-like down, (which readily rubs off. E.)

(My eminently scientific friend the Chevalier Corrêa da Sêrra first pointed out to Sir J. E. Smith the peculiar irritability of this plant; by which, if

the stem be struck with a stick, the corollas will, in a few minutes, be thrown off, the calyx closing round the germen; as recorded in Eng. Fl. E.)

(POWDERY MULLEIN. YELLOW HOARY MULLEIN. NORFOLK MULLEIN. *V. Lychnitis*. Var. 1. With. Ed. 4. *V. pulverulentum*. Villars. Sm. Hook. E.) Very common in Norfolk. Mr. Woodward. Bury; Wollerton, near Nottingham. Ray. (In a den near Cullen. Maughan, in Hook. Scot. E.) B. July.

(Smith also describes a variety which he conceives to be the offspring of *V. nigrum*; though in general habit resembling *V. pulverulentum*, having leaves more strongly scalloped; the root-leaves on stalks; stem and leaf-stalks tinged with purple. Root generally perennial. *V. var. β. nigropulverulentum*. Fl. Brit.

At Helleston, near Norwich, frequent. Mr. Woodward informs me that this curious variety grows on gravelly soil at Ditchingham, near Bungay; and observes that the different species of *Verbascum* seem to have a peculiar propensity to intermingle and form hybrids. From Bot. Guide we learn that Mr. Wigg cultivated for many years *V. nigrum*, *pulverulentum*, and *Blattaria*, and the seminal varieties which rose in almost every possible state of intermediate gradation between them, were highly curious and beautiful. E.)

V. NI'GRUM. Leaves heart-oblong, on leaf-stalks: (irregularly crenate; slightly pubescent. E.)

(Hook. Fl. Lond. 103. E.)—E. Bot. 59—Fl. Dan. 1088—Fuchs. 849—Dod. 144. 1—J. B. iii. 873. 3—Trag. 218—Ger. 631. 2—Ger. Em. 775. 2—H. Or. v. 9. row 2. 5.

Stem angular, (three or four feet high, often coloured. E.) Leaves heart-spear-shaped, not doubly scalloped; the lower on broad leaf-stalks, (nearly glabrous, dark green; radical ones nearly a foot long. E.) Flowers about seven in a set. Spike long, cylindrical, but not very compact. The beauty of its golden yellow blossoms is much enriched by the tints of purplish brown at the mouth of the tube, and orange-coloured anthers. (Stamens clothed with purple hairs. E.)

BLACK MULLEIN. Hedges and road sides. Road sides, sandy soil, Suffolk. Woodward. At Hamstead, betwixt Birmingham and Walsal. Plentiful in Kent and Norfolk. (Near the cross, on the road from Ashow to Stonleigh, plentiful. Perry. Tyne and Wear Ballast Hills. Mr. Winch. Borthwick Castle. Mr. Maughan, in Grev. Edin. Near Arreton and Merston. Mr. Snooke. Between Crafthole and Looe, Devon. Rev. P. Jones. P. July—Sept.*

* (Probably named from the darker hue or blackness of the leaves. It is a handsome plant, not inappropriate to shrubberies. The flowers are grateful to bees, and should be encouraged near to the Apiarium. Minute attention to the conspicuous parts of these flowers might perhaps lead to the detection of a singular circumstance thus recorded by Goldsmith. "But honey is not the only food on which these animals subsist. The meal (farina) of flowers, of which their wax is formed, is one of their most favourite repasts. When the flowers upon which bees generally feed are not fully expanded, and this meal or dust is not offered in sufficient quantities, the bees pinch the top of the stamina in which it is contained, with their teeth; and thus anticipate the progress of vegetation. Swine eat it; sheep are not fond of it; cows, horses, and goats refuse it. E.)

314. PENTANDRIA. MONOGYNIA. VERBASCUM.

V. VIRGATUM. Root-leaves somewhat lyre-shaped: stem-leaves sessile: stem branching: fruit-stalks several together, sessile. St.

(*E. Bot.* 550. *E.*)—*J. Bot. Fr.* 564—*J. B.* iii. 875. 1.

Root branched, oblique, whitish, bitter. *Stem* upright, from five to six feet high, branching from the bottom, cylindrical, marked with superficial angles from the edges of the leaves running down the stem, and of a wood-like hardness below. *Branches* undivided, long, rod-like, alternate, solitary, leafy below, beset with flowers to the length of two feet and upwards. *Root-leaves* much resembling those of the *Common Primrose*. *Lower stem-leaves* oblong-spear-shaped, or egg-oblong-spear-shaped, notched, and some of the lowermost scalloped towards the base, narrowing down into very short leaf-stalks. *Upper stem and branch-leaves* egg-shaped, or oblong-egg-shaped, toothed, not serrated as in *V. Boerhaavii* and *Blattaria*: sessile, not embracing the stem as in *V. Blattaria*. *Floral-leaves* egg-shaped, gradually diminishing, the uppermost spear-shaped, and at length becoming a mere scale. *Flowers* nearly sessile, in small clusters from the sides of the stem and branches, at moderate intervals. *Blossoms* yellow, with a purplish ring round the mouth; one inch and a quarter diameter; two or three in bloom at once. *Fruit-stalks* horizontal, very short, seldom more than half the length of the calyx.

(**LARGE-FLOWERED MULLEIN.** *E.*) *Blattaria lutea major, sive Hispanica.* *Park.* 64. and *Par.* 383—*B. lutea fol. long. laciniato altera 4 cubitorum*, 3, 4, 5, et plura vascula conjuncta habens. *C. B. Pin.* 240—*B. magno flore.* *C. B. Pin.* 241. *J. B.* iii. 875. *R. Hist.* 1096. *Tourn.* 148.

First found by Mr. Waldron Hill, of Worcester, in a field on the south side of a lane leading from Gregory's Mill to the turnpike road, near that city. Side of the turnpike road from Worcester to Ombersley, opposite the lane leading to Beverey. Cultivated for three years without any perceptible alteration. Dr. Stokes. (Ten miles from Ludlow, on the Shrewsbury road. Dr. Evans, in Bot. Guide. Brought from a field near Wrexham to the neighbourhood of Worcester, by Mrs. Nash; according to Rev. Mr. Baker, in Eng. Fl. B. Aug. E.)

V. BLATTARIA. Leaves embracing the stem, oblong, smooth, serrated: fruit-stalks single-flowered, solitary.

(*E. Bot.* 393. *E.*)—*Fuchs.* 183—*Trag.* 925—*J. B.* iii. 874. 1—*Ger. Em.* 778. 7—*Park.* 64. 3—*Ger.* 633. 1—*Matth.* 1151—*Dod.* 145. 1—*Lob. Obs.* 304. 2—*Ger. Em.* 776. 1—*Park.* 61. 5—*Pet. ii.* 62. 5—*H. Ox.* v. 9. row 3. 5.

Stem two or three feet high, slightly angular, smooth. *Leaves* somewhat wrinkled. Pollich. *Leaves* glossy on the upper side; sometimes toothed, and sometimes notched; lowermost wing-cleft at the base. *Fruit-stalks* longer than the flower-leaves. (*Bloss.* streaked with purple at the base; stained with brown at the back. *Stam.* very unequal, bearded with purple hairs. *Caps.* globose, with a furrow on each side. Whole herb fetid and acrid. Sm. E.)

MOTH MULLEIN. Gravelly soil. Lane between Mitcham Common and Carshalton: Horn's Place near Rochester; between Deptford and Greenwich. Ray. About Plymouth and Ashburton, Devonshire. Hudson. (Near the fourteenth mile-stone from London to Dartford. Blackstone. Five miles from Ludlow, on the Shrewsbury road. Dr. Evans, in

E. Bot. Aspatia Church-yard, Cumberland. Rev. J. Dodd. Common about Durnsley and Kinver, Staffordshire. Scott, in Purton. E.)

A. June—July.

(*V. phoeniceum*, *Purple Mullein*, is said to have been found by the Rev. Hugh Davies, in an old fence between Beaumaris and the alms-house, but we have not seen specimens. E.)

DATURA. *Bloss.* funnel-shaped, plaited; *Cal.* tubular, angular, falling off with the blossom: *Caps.* two-celled, four-valved.

D. STRAMO'NIUM. Seed-vessel spinous, erect, egg-shaped: leaves egg-shaped, smooth, (sinuate. E.)

(*E. Bot.* 1298. E.)—*Stoerck.*—*Fl. Dan.* 436—*Woodv.* 124—*Kniph.* 10—*Chs. Exot.* 289—*Ger. Em.* 348. 2—*Blackw.* 313—*Col. Phytob.* 12.

A large wide spreading, strong smelling plant, about two feet high. *Leaves* large, deeply indented. *Blossom* (about three inches long, sweet-scented, especially at night, Sm. E.) white, sometimes with a tinge of purple. (*Seeds* kidney-shaped, black. *Pericarp* the size of a walnut. E.)

THORN-APPLE. (Welsh: *Meiwyn.* E.) Amongst rubbish and on dung-hills. Tritton Heath, Suffolk. Mr. Woodward. (By the road side beyond Brooke, Norfolk, in the way to Bungay. Fl. Brit. In meadows near Reading. Mr. Fardon, in Bot. Guide. On rubbish at Salthill, near Windsor. Mr. Gotobed. At Wisbech. Dr. Skrimshire. Sunderland Ballast Hills. Mr. Winch. At Ride, Isle of Wight. Mr. S. Woods. About London, and Swansea, common. Mr. Dillwyn. ditto. About Salford and Alcester. Purton. On a newly-formed bank of earth in the Saltisford brick-yard, Warwick. Perry. Produced abundantly on breaking up a piece of ground in the demesne of Maes y Porth, Anglesey, which had not undergone any agricultural process for at least a century. Rev. H. Davies. See *Osmunda Regalis*, v. 3. E.) A. July.*

* At night the leaves, particularly the upper ones, rise up and inclose the flowers. An ointment prepared from the leaves gives ease in external inflammations and hemorrhoids. The Edinburgh College directs an extract to be prepared by evaporating the expressed juice of the leaves. This has been given with great advantage in convulsive affections and epilepsies. Out of fourteen epileptic patients, eight were entirely cured by it at Stockholm. The dose from two to sixteen grains a day. Med. Comm. i. 368. iii. 22. See also Lond. Med. Journ. ii. 295. The seeds or leaves given internally bring on delirium, tremors, swelling, itching, eruption and inflammation on the skin: these effects were produced by a dose of a dram and a half, in a girl of nine years old. See Dr. Fowler's account. Med. Com. vol. 5. p. 164. (As of other narcotics, a full dose induces giddiness, dilatation of the pupil of the eye, head-ache, drowsiness, difficulty of swallowing, and often delirium, convulsions, and death. Lempriere's Lect. p. 228. Dr. Marcet, in a valuable paper, (Med. Chirurg. Tr. v. vii.) reports extract of *Stramonium*, cautiously administered, sensibly to reduce pain in chronic diseases. The seeds are most to be depended on for internal use, and have been analysed by Mr. Brandes, Vid. Buchner's Report. 1821. E.) Cows, goats, sheep, and horses refuse it. (Dr. Swediaur states that an antidote to this poison has been found in the acetous or citric acid. This plant has lately acquired general attention by its alleged efficacy in alleviating and warding off fits of spasmodic asthma. The Monthly Magazine appears to have been the principal vehicle of intelligence on this interesting subject, and in the vols. for 1809, 1810, and 1811, may be found many authentic statements. We shall here only extract the perspicuous directions given in vol. 29. p. 409. "It is the root only, and the lower part of the stem, which seem to possess the anti-asthmatic

HYOSCYAMUS.* *Bloss.* funnel-shaped; the lobes obtuse, irregular: *Stam.* declining: *Caps.* covered with a lid, two-celled: *Seeds* many, kidney-shaped.

H. NIGER. Leaves embracing the stem, sinuated: flowers sessile.

(*E. Bot.* 591. E.)—*Kniph.* 1—(*Fl. Dan.* 1452. E.)—*Lindl.* 85—*Clus.* ii. 83—*Dod.* 450. 1—*Lob. Obs.* 139. 1—*Ger.* 283. 1—*Ger. Em.* 353. 1—*Woodv.* 52—*Park.* 362. 1—*Blackw.* 550—*Riv. Mon.* 102—*Stoerck—H. Ox.* v. 11. row 2. 1—*Matth.* 1064—*Fuchs.* 833—*J. B.* iii. 627. 1—*Trag.* 133.

(*Root* fusiform. *Stem* bushy, twelve to eighteen inches high, very leafy. *Leaves* sub-ovate, large, alternate. *Spike* leafy, terminal, recurved, obtuse. E.) Whole plant with a strong and peculiar odour; hairy and viscid. *Calyx* woolly at the base, a little distended on the under side, (persistent. E.) *Blossom tube* white, with the middle deep purple; *border* pale yellowish brown, beautifully veined with purple. *Anthems* and style of a fine deep purple. (The roots exhale a powerful narcotic scent. E.)

(A veinless variety has been observed at Fincham, Norfolk, by the Rev. R. Forby. Sm. E.)

COMMON HENBANE. (Irish: *Gafain.* Welsh: *Parfyg; Ffuen y moch; Crys y breuin.* E.) Villages, road sides, and amongst rubbish, not uncommon, (particularly in the midland and southern counties. Mr. Winch observes, it is common about all the villages of Northumberland, Cumberland, and Durham, especially near the sea-coast. The habit of this plant being in general solitary, it would be well for medical purposes to record such spots as produce it more abundantly; a remarkable instance of profusion is exhibited around the ruined fishermen's huts on the steep Holmes Island in the Severn, as observed by the Editor, June 23, 1826. E.) A. June.†

virtue; these should be cut into small pieces, and put into a common tobacco pipe, and the smoke must be swallowed together with the saliva produced by the smoke; after which the sufferer will, in a few minutes, be relieved from all the convulsive heaving, and probably drop into a comfortable sleep, from which he will awake refreshed; and in general perfectly recovered. He must avoid drinking with the pipe, but will find a dish of coffee afterwards highly refreshing." Cases and more copious details have also been collected and published in a separate volume by Phillips. Thus far we believe to be truth, but every popular remedy must be a *panacea*; and we are sorry to learn that under the vain idea of curing Consumption of the lungs, *Stramonium* has been incautiously used as tea by ignorant persons, and in some instances has proved speedily fatal. In China the use of it in fermented liquors, (to produce intoxication), is forbidden by law. E.)

* (From *υς*, swine; *κίσπος*, a bean: but why thus denominated is not apparent. E.)

† The seeds, the leaves, and the roots, taken internally, are reputed poisonous; and well authenticated instances of their fatal effects are recorded. Madness, convulsions, and death, are the general consequences. (Threlkeld details a conclusive case, in which Mr. Burdett, Dean of Clonfert, and four other persons, were poisoned, with the horrible symptoms here described. Nor were such effects unknown to the ancients. Vid. Dioscorid. iv. 69. E.) But Sir J. E. Smith states that he has often eaten the seeds with impunity. (They are generally supposed to prove destructive to poultry, whence the vernacular designation. E.) It is said that the leaves scattered about a house will drive away mice. ("The root perforated, and strung like beads, is used for a Torquis to children in cutting their teeth, together with the roots of Peony." Threlkeld Stirp. Hibern. E.) The Edinburgh College order the expressed juice of the plant to be evaporated to an extract; and in this state it may be advantageously joined with opium, where the effects of that medicine are desirable, and costiveness is to be avoided. There is no doubt of its being an useful medicine under proper management. The dose is from half a scruple to half a dram.

(H. AL'BUS. Leaves on leaf-stalks, bluntly sinuate: flowers sessile.

Blackw. 111—*Kniph.* 2.

Herb about two feet high. Leaves dull green. Bloss. cream-colour.

WHITE HENRANE. This plant, new to the English Botanist, has been found at different times by Mr. Robson of Darlington, on Ballast Hills and other places near Sunderland, though probably imported, as many others gradually admitted into our Flora. A. July—Aug. E.)

ATROPA.* Bloss. bell-shaped: Stam. distant: Berry globular, two-celled: (Anthers heart-shaped. E.)

A. BELLADON'NA. Stem herbaceous: leaves egg-shaped, entire: (flowers solitary. E.)

(E. Bot. 592. E.)—Curt. 347—*Lindl.* 128—*Jacq. Austr.* 309—*Fl. Dan.* 768—*Kniph.* 9—*Sheldr.* 101—*Mill.* 62—*Woodv.* 1—*Clus.* ii. 86. 1—*Dod.* 456. 1—*Lob. Obs.* 134. 2—*Ger. Fm.* 340—*Park.* 346. 6—*Ger.* 269—*H. Oz.* xiii. 3. 4—*Blackw.* 564—*Matth.* 1073—*J. B.* iii. 611. 1—*Fuchs.* 689—*J. B. Ib.* 2—*Ib.* 3—*Trag.* 301.

(Stems annual, rather pubescent, numerous, branched, flexuose, two or three feet high. Root fleshy, thick, creeping. Calyx somewhat pubescent, viscous. Anthers large, whitish. Berry with many seeds. Leaves petiolate, in pairs, one always smaller than the other, dull dark green. Blossoms lurid purple, large, pendulous. Calyx viscous. Berry green, changing to red, and when ripe, black, many seeded. E.)

DEADLY OR SLEEPY NIGHTSHADE. DWAYBERRIES. DWALE. Hedges, amongst limestone and rubbish. In St. Faith's, Newton, near Norwich; and in Herts, frequent. Mr. Woodward. Very luxuriant amongst the mines of Furness Abbey, whence the valley is called the Vale of Nightshade. Mr. Atkinson. Yard of Lantony Abbey, near Gloucester. Mr. Ballard. Hardwick Park, Derbyshire. Dr. Stokes. (Isell Hall woods, Cumberland. Hutchinson. Netley Abbey, Hants. Mr. W. Christy. Banks of the Wear, near Durham Abbey. Winch Guide. On Inchcolm, and near the ruins of Borthwick Castle. Mr. Maughan, in Grev. Edin. E.) Banks of Dudley Castle. P. June—Aug.†

Goats are not fond of this herb. Horses, cows, sheep, and swine refuse it. Linn. Sheep sometimes eat it when young. Mr. Ballard. *Chrysomela Hyoscyami*, and *Cymex Hyoscyami*, are found upon it. (The extract or tincture produces salutary effects as an anodyne, but must be administered with a cautious and gradual increase of dose. Even bathing the feet in a decoction of this plant is said to induce somnolency. Celsus recommends milk as an antidote for Hyoscyamus; but we can scarcely conceive its operation to be other than that of a mild diluent. A solution of the extract has lately been used by oculists for dilating the pupils of the eyes (vid. also *Atropa Belladonna*), in order to facilitate the operation for cataract. Edin. Dispens. The fumes from the seeds of Henbane, heated in the bowl of a tobacco pipe, placed in the fire, have been recommended in severe tooth-ach. The fumes may be conveyed from the pipe to the affected tooth by a tube of tin. E.)

* (After ARAROS, one of the Fates or PARCÆ supposed to sever the thread of life, ("Atropos occidit") in allusion to the deadly quality of the plant. E.)

† The more gentle appellation of this species, *Bella-donna*, (*Fair Lady*), probably arose from its being used as a cosmetic by the Italian belles. E.) The whole plant is poisonous, (inducing convulsions, violent distortions, and a deadly stupor; against which, if promptly administered, a glass of warm vinegar, and exercise to prevent sleep,

SOLANUM. Bloss. wheel-shaped: *Anthers* slightly united, each opening with two pores at the top: *Berry* two-celled.

S. DULCAMA'RA. Stem without thorns, shrubby, flexuose: upper leaves halberd-shaped: flowers in cymose bunches.

are the best remedies, where the use of the *stomach pump* cannot be quickly obtained. Vid. Ray's account of the Mendicant Friar. E.) And children, allured by the beautiful appearance of the berries, have too often experienced their fatal effects. (Dr. Ruty, of Dublin, records the case of a child six years old, who, on eating only nine of the berries, grew comatose and died the next day. Where death ensues, the body soon putrefies, swells remarkably, is covered with livid spots, and blood sometimes flows from the mouth, nose, and eyes. E.) Tumours of the breasts, even cancerous, are said to have been resolved by a topical application of the fresh leaves. Dr. Graham in Med. Communicat. vol. i. p. 419, says, he found great benefit from a poultice made of the roots, boiled in milk, and applied to hard ill-conditioned tumours and ulcers; and relates a deplorable case, in which this poultice effected a perfect cure. There is no doubt but their external application may be productive of good effects in certain cases, but the following instance shows that their application is dangerous when the skin is broken: A lady who had a small ulcer a little below one of her eyes, which was supposed to be of a cancerous nature, put a small bit of the green leaf upon it. In the morning the uvula of that eye was so affected that the pupil would not contract, even in the brightest light; whilst the other eye retained its usual powers. The leaf being removed, the eye was gradually restored to its former state. This could not be an accidental effect, for it was repeated three different times, and the same circumstances attended each application. Ray Hist. 680. (The powdered leaf would probably be more manageable.—The caterpillars of *Phalena antiqua* and *brassica* feed upon its foliage. E.) The juice of the ripe berries stains paper of a beautiful and durable purple. (We learn from the Edin. Dispens. that Mr. Brandes, apothecary in Salz-Uffeln, has discovered in this plant a new alkaloid, upon which its narcotic virtues depend. The Atropia may be obtained separate, but Mr. B. urges the necessity of caution in the examination of these salts. Even the vapour of their solutions causes dilatation and paralysis of the pupil; and during the whole time of the experiments Mr. B. experienced violent head-ache, vertigo, and nausea, so that he could scarcely continue them. On tasting a small quantity of Sulphate of Atropia, he suffered extreme confusion of head, trembling in all his limbs, rigors and heat, action of the heart scarcely perceptible, and vomiting. Yet this virulent poison may become an excellent remedy with further experience. Besides its narcotic power, it promotes all the excretions. From its effect in dilating the pupil for some time, Prof. Reimarus tried with success the dropping a little of the infusion into the eye, a few hours before performing the extraction for the cataract, with a view of facilitating the operation. A solution of the extract is the nostrum which itinerant oculists use too indiscriminately, though sometimes with wonderful effect. A young lady was enabled to recover vision, by keeping the pupil dilated during the day, by application four times a day. Its good effects did not diminish in eight years' use.—Connected with this deleterious herb, (*Solanum lethale* of the older writers), is a remarkable historical event, which, however at the time enrolled among the annals of patriotism, must, in a more civilized age, be reprobated as an atrocious instance of barbarian perfidy. According to Buchanan, in the reign of Duncan I. King of Scotland, (afterwards murdered by the tyrant Macbeth), Harold the Dane invaded England, while his brother Sweno made a descent upon Scotland. Landing in Fife, he gained a signal victory, and pursued the Scots to the ancient Perth, where the remnant of their army scarcely retained the power of resistance. The Scottish monarch possessing little martial energy, entrusted the conduct of affairs to his lieutenants, the wily Banquo and the aspiring Macbeth. While the latter was employed in raising fresh forces, the former negotiated a truce; engaging likewise to supply provisions for the hostile army. The liquors sent proved a deadly poison from an infusion of the Dvale. The invaders drank so freely and unsuspectingly, that they were quickly overpowered and slaughtered by their treacherous foes, and with difficulty re-embarked even their king. E.)

(*E. Bot.* 565. *E.*)—*Ludw.* 58—*Curt.* i. 1—*Fl. Dan.* 607—*Blackw.* 34—*Kniph.* 1—*Woodv.* 33—*Dod.* 402. 2—*Lob. Obs.* 136. 4—*Ger. Em.* 350—*Park.* 350—*Ger.* 279. 1—*Trag.* 816—*Matth.* 1281—*J. B.* ii. 109. 2.

(*Root* woody. *Stems* twining, several feet high, slender. *Leaves* alternate, petiolate, egg-spear-shaped; the upper sometimes, but not always, halberd-shaped. *Blossoms* purple, with two green spots at the base of each reflexed segment, in drooping branched corymbs. *Anthers* large, yellow, on the first opening of the blossom readily separable, but afterwards growing dryer, they sooner tear than be disjoined. *Berries* scarlet, oval. *Blossom* sometimes flesh-coloured; rarely white. *E.*)

(*Leaves* not unfrequently variegated. *Sm.* *E.*)

Var. 2. *Leaves* hairy. *Huds.* Sea coast. *Ray* and *Hudson.*

BITTER-SWEET. WOODY NIGHTSHADE. (*Irish: Dremire Gorm.* *Welsh: Elinog; Mynyglog.* *E.*) Moist brakes, hedges, and sides of ditches. P. June—July.*

Stem without thorns, herbaceous: leaves egg-shaped, bluntly toothed, angular: umbels pendent, lateral.

(*E. Bot.* 566. *E.*)—*Ludw.* 172—*Curt.*—*Fl. Dan.* 460—*Woodv.* 226—*Sheldr.* 106—*Blackw.* 107—*Dod.* 454. 1—*Lob. Obs.* 133. 2—*Ger. Em.* 339. 1—*Park.* 346. 1—*H. Or. a* xiii. 1 row 1. 1—*Matth.* 1069—*Ger.* 268. 1—*Fuchs.* 686—*J. B.* iii. 6. 608—*Trag.* 303.

Root fibrous. *Stem* branched, angular. *Fruit-stalk* lateral, midway between the leaves. *Blossom* white. *Berries* black when ripe, (sometimes yellow. *Huds.* *Herb* fetid, narcotic, bushy, with numerous leafy branches. *Leaves* undivided, lengthened out at the base, smooth. *Flowers* musky. *Sm.* *E.*) With us it is a truly herbaceous annual, but in Portugal I have seen the stem from half to one inch diameter, completely ligneous, and its duration certainly biennial, probably perennial, the stem and branches becoming quite black with age. The figure of Curtis seems to have been taken from a plant in an intermediate state, between the strictly herbaceous northern, and the woody southern varieties.

COMMON NIGHTSHADE. GARDEN NIGHTSHADE. (*Welsh: Mochlys cyffredin; Mochlys grawnddu.* *E.*) Amongst rubbish. On dunghills, and in kitchen gardens. A. June—Oct.†

* (The berries, "shaped like an egg, and sparkling like a ruby," as Miss Kent elegantly describes them, are bitter and poisonous, exciting violent vomiting and purging. The roots and stems yield a bitter taste, followed by a degree of sweetness; hence, both the Latin and English, (though the former a somewhat inverted compound), specific names. *E.*) Boerhaave reports it to be a medicine far superior to China and Sarsaparilla as a sweetner and restorative. Linnæus says an infusion of the young twigs is an admirable medicine in acute rheumatism, inflammations, fevers, and suppression of the lochia. Dr. Hill found it efficacious in asthma. Dr. Wallenberg advises it in ischiatic and rheumatic pains, jaundice, scorbutic affections, and syphilis. He directs a pint of boiling water to be poured upon two drams of the stalks sliced and dried; after standing half an hour, it must be boiled fifteen minutes. The dose is two tea cups full or more, morning and evening. The stalks may be gathered early in the spring, or at the end of autumn. *Med. Com. vol. 3. p. 15.* (The Westphalians are said to find a remedy for the scurvy in a decoction of the whole plant. *Per contra*, it may be observed on the faith of Sir John Floyer, that thirty of the berries killed a dog in less than three hours. *E.*) The root has the smell of its congener the potatoe. Sheep and goats eat it. Horses, cows and swine refuse it.

† (Its fatal effects on children have been recorded by Webber and other authors. The berries are equally poisonous with the leaves, and to poultry they are immediately fatal.

(ERYTHRÆA.* *Cal.* five-cleft: *Bloss.* funnel-shaped; the limb short: *Anthers*, after flowering, spirally twisted: *Style* erect: *Summits* two: *Caps.* linear, two-celled. E.)

(E. CENTAURIUM. Herbaceous, dichotomously paniced: leaves egg-spear-shaped: calyx shorter than the tube of the blossom: its segments partly combined by a membrane. E.)

Dicks. H. 8.—Curt. 247.—(E. Bot. 417. E.)—Woodv. 157.—Fl. Dan. 617.—Kniph. 8.—Walc.—Sheldr. 82.—Fuchs. 387.—J. B. iii. 353. 2.—Matth. 655.—Dod. 336.—Lob. Obs. 218.—Ger. Em. 547.—Park. 272. 1.—Blackw. 452.—Trag. 140.—Ger. 437.—H. Ox. v. 26. row 1. 5.

Blossom sometimes only four-cleft. Huds. and rarely white. Ray. *Plant* ten or twelve inches high; upright, dividing at the top into three flowering branches; and occasionally one or two flowering branches spring from the bosom of the leaves on the side of the stem. *Flowers* forming a corymb. *Calyx* adhering to the tube of the blossom, and that again to the germen. *Blossom* large, funnel-shaped, tube long, yellowish; border pinky red, segments lapping over each other. *Anthers* twisted spirally after discharging the pollen. *Style* cylindrical, cloven at the top, and divisible without much force all the way down. *Summits* two, shaped like a horse-shoe, yellowish green. (*Radical leaves* spreading, three-nerved.

The Marquis of Blandford is said to have found a variety of this plant with perfectly white blossoms, not rare in Warwickshire; and also observed near Dudley, by Mr. Bree. *Purt.* E.)

Var. 2. Much branched.

Vaill. 6. 1.

(Var. 3. *Dwarf*; hardly one inch high. This grows on barren limestone rocks, and has much the appearance of *E. pulchella*, but, however small, it still preserves its dichotomous habit, and its leaves have not the woody ribs or nerves evident in *E. pulchella*. The calyx best distinguishes *E. pulchella* from starved specimens of *E. Centaurium*.

Even its odour is said to be so powerfully narcotic as to cause sleep. E.) From one to three grains of the leaves infused in boiling water, and taken at bed-time, occasion a copious perspiration, increase the secretion by the kidneys, and generally operate more or less on the bowels the following day. These properties, judiciously applied, render it capable of being essentially serviceable in several diseases, as may be seen in Gataker's Treatise on the Solanum, (1757). But its effects on the nervous system are so uncertain, and sometimes so considerable, that it must ever be administered with the greatest circumspection. The leaves externally applied abate inflammation, and assuage pain. The flowers smell like musk. Horses, cows, goats, sheep, and swine refuse it. (From considerable experience. Surgeon Bromfield contends that its use is prejudicial; and the rash practice of the ancients, from which even Galen and Dioscorides are not exempt, seems to justify the caution of Gerard, who says, "we must not unadvisedly, lightly, or rashly, minister such kind of medicines, as many times there hapneth more danger, by applying of these remedies, then of the disease itself." It is prudently discarded from modern practice. According to Boethius, the destruction of the Danish invaders of Scotland was occasioned by this plant, rather than the Deadly Dwaile, under which we have noticed the fact. But we think such qualities as filling the head with odd imagies and fancies:"—the

"insane roof,
That takes the reason prisoner:" Shaks.

Enabling mortals to see even supernatural apparitions: (as admitted under "*Salutrum ameritale*" also by Bochart and Salmasius), best accord with the Dwaile. E.)

"(Descriptive of the red colour most predominant in the flowers. E.)

COMMON CENTAURY. (Irish: *Deaga Dearg*; *Dremirc Muire*. Welsh: *Canrhi goch*; *Ysgol Fair*, N. W.; *Ysgol Crist*, S. W. *Gentiana Centaurium*. Linn. (Huds. Lightf. *Chroina Centaurium*. With. Curt. Sm. Fl. Brit. Willd. *E. Centaurium*. Pers. Hook. Sm. Grev. E.) Barren or gravelly pastures. A. June—Aug.*

(E. LITTORALIS. Stems herbaceous, simple, straight: leaves linear-obovate, obscurely three-ribbed: flowers densely corymbose, nearly sessile: calyx as long as the tube; its segments combined below.

E. Bot. 2305.

Stems about two inches high, generally solitary, stiff and straight, leafy at the top and bottom only. Flowers large and handsome, with obtuse segments, numerous, almost sessile. All the leaves seem liable to vary in breadth, and when they become almost elliptical, there are two additional ribs. Sm.

DWARF TUFTED CENTAURY. (Welsh: *Canrhi gôch arfor*. E.) On the sea coast of Elginshire, near Brodie. Mr. Brodie. Abundant on Holy Island, and the coast of Northumberland. Mr. Winch. (Sea coast below Llanfaelog, and on Tywyn trewan, Anglesey. Welsh Bot. Guillon Links. Mr. Maughan. A. June. E.)

(E. LATIFOLIA. Stem three-cleft at the top: flowers in dense forked tufts: calyx as long as the tube: segments of the blossom lanceolate: lower-leaves broadly elliptical, with five or seven ribs.

Stem solitary, erect, scarcely three inches high, leafy, simple below, divided at the top into three principal branches, each terminated by a very compact, round, densely forked, head of flowers, which are but half the size of those of *E. Centaurium*, the segments of their blossom being lanceolate and much narrower than in either that species or the last. A smaller tuft or two is now and then observed lower down. Leaves, especially the lower ones, are very different from the last species, as well as from *E. Centaurium*, being sometimes almost orbicular, with seven ribs in their lower part: more generally broadly elliptical, and obtuse, with five ribs. Calyx as long as the tube, or longer, its segments broad and membranous below, tapering at the upper part. Anth. spiral when old. Style erect, cloven, with two large stigmas. Sm.

BROAD-LEAVED TUFTED CENTAURY. On sandy ground near the sea at Bootle near Liverpool. Dr. Bostock: and also on Crosby Rabbit-warren, with Mr. Shepherd. A. July. E.)

• (It is recommended as a good substitute for Gentian by Dr. Cullen; may be obtained at a more moderate price, and is equally efficacious. E.) It is the basis of the famous Portland Powder, which prevents fits of the gout, when taken in large quantities, and a long time together; but brings on induration of the liver, palsy, and apoplexy.—A tincture of the leaves, and the upper part of the root, is a good medicine in weak stomachs and cachectic habits. A decoction of the whole plant destroys vermin, and cures psora. Cows are not fond of it. Linnæus. And in sheep pastures it is frequently left untouched. Stokes. (Its intense bitterness caused it to be named by the ancients *Fel Terra*, or Gall of the Earth. The following couplet of Joannes Postius proves the estimation in which it was formerly held:

“Flos mihi suave rubet, sed inest quoque succus amarus,
Qui jurat obsessum hile, aperitque jecur.” E.) •

(*E. PULCHELLA*. Stem forked, variously branched, or simple winged : flowers solitary, stalked : calyx more than half as long as the tube : segments of the blossom lanceolate : leaves ovate.

E. Bot. 458—*Swartz. Act. Stockh.* 1783. t. 3. f. 89.

Stem solitary, erect, from one to two or three inches high, sometimes more, varying extremely in luxuriance, being naturally much branched in a forked corymbose manner ; but in a starved state, as *Swartz* met with it quite simple and single-flowered ; in every form it is leafy and square, with membranous, more or less dilated, angles. *Leaves* ovate, bluish, with three or five slender ribs ; the upper ones more lanceolate ; lowest obovate or round. *Fl.* stalked from each fork, as well as from each termination, of the stem, erect, slender. *Cal.* above half as long as the tube even in an advanced state ; at an early period full as long, with slender awl-shaped segments, combined by a membranous base. *Bloss.* with a pale slender tube ; the limb of a full pink, as delicate and narrow as in the last, much less ovate than in the two former species. *Anth.* less spiral than in any of them, making scarcely one turn. *Style* a little oblique, with large spreading stigmas. *Caps.* long, tumid, invested with the blossom, as in other species. *Sm.*

BRANCHED DWARF CENTAURY. In sandy grounds, chiefly near the sea. *E.*)

Downs at Port Owen, Cornwall, near the sea. *Mr. Watt.* (Gorlestone, Suffolk, near the sea. *Mr. Turner.* Braunton Burroughs, Devonshire. *Rev. Dr. Goodenough.* On Cromlyn Burrows, near Swansea, abundant. *Mr. Dillwyn.* Near Sandwich, and plentifully above Sandgate. *Mr. J. Woods, jun.* Very common on the South Downs, Sussex. *Mr. Borrer.* *Bot. Guide.* Mary-Church Devon. *Rev. J. Pike Jones.* Sea-coast, near Prestatyn, Flintshire. *Mr. Griffith.* Isle of Sheppey. *Mr. Winch.* *E.*) A. Aug.—Sept.

RHAMNUS.* *Calyx* tubular ; bearing the petals : *Berry* about three-celled. *E.*)

R. CATHARTICUS. Thorns terminal : flowers four-cleft, barren and fertile on different plants : leaves egg-shaped, serrated : stem upright : (berry four-seeded. *E.*)

Fl. Ross. i. 61—*Fl. Dan.* 850—(*E. Bot.* 1629. *E.*)—*Blackw.* 135—*Matth.* 158—*Woodv.* 114—*Dod.* 756—*Ger. Em.* 1337. 2—*Park.* 243. 1 at the bottom—*Clus.* i. 111—*Lob. Obs.* 599. 1—*Ger. Em.* 1337. 1—*Park.* 243. 1.

(*Flowers* much clustered, on short fruit-stalks, yellow green. *Hook.* Not invariably dioecious. *Fl. Brit.* *E.*) *Summit* quadrifid. *Stamens* four. *Blossoms* pale green. *Berries* black, (nauseous, with four cells. *E.*)

COMMON BUCKTHORN. (Irish : *Bren Uhal*, *Maidé Bren.* Welsh : *Rhafnwydden.* *E.*) (Clapham, and Ravensden, in woods and hedges. *Abbot.* Hedges near Reading. *Mr. Fardon,* in *Bot. Guide.* Near Eton. *Mr. Gotobed.* Garregwen rocks, near Garn, Denbighshire. *Mr. Griffith.* Plentiful at Brixton, and in other parts of Devonshire Polwhele. *Ryhope Dean,* Durham, on the edges of rocks. *Mr. Weighell.* Woods at Penrice, and on the Flat Holmes, Glamorganshire. *Dr. Turton.*

* (Possibly compounded from *ρῆμα* to destroy, and *μακρ* strength ; alluding to its drastic qualities. *E.*)

Woolpit Wood, near Bury. Sir T. G. Cullum. Common near Copgrove, and other places in Yorkshire. Rev. J. Dalton. ditto. About Bidford, Purton: and Radford, Warwickshire; Perry. In hedges near Wern, in Llandegfan, Anglesey. Welsh Bot. About Dunfries. Mr. Yalden. Hook. Scot. Woods and hedges near Norwich. Mr. Crowe. Side of a brook near Hanley Castle, Worcestershire. Mr. Ballard. In Shropshire, common. E.) S. April—May.*

R. FRANGULA. Without thorns: (flowers all perfect: style simple: leaves very entire, smooth: berry with two seeds. E.)

Kniph. 5.—*E. Bot.* 250—*Lindl.* 82—*Blackie.* 152—*Fl. Dan.* 278—*Matth.* 1271—*Ger.* 1286—*Lob. Obs.* 594. 2—*Park.* 240—*Dod.* 784. 1—*Ger. Em.* 1470—*J. B.* i. 560. 2—*Trag.* 981—*Lob. Obs.* 594. 1.

A small shrub; flowers small, two or three together, axillary, on longish foot-stalks, whitish green. Berries dark purple. Hook. Blossom with five clefts. Summit cloven. The inner bark is yellow; the outer sea green, and the middle bark red as blood. Linn. Berry with three cells. Scop.

BERRY-BEARING ALDER. ALDER BUCKTHORN. Woods and wet hedges. Woods, Suffolk. Mr. Woodward. Wood at Smethwick, near Birmingham. Stokes. Hedges at Pendeford, near Wolverhampton. Mr. Pitt. Landsmouth Wood, four miles north of Knapton, Yorkshire. Mr. Flin-toll. Cotelife Wood, near Burrowby. Mr. Robson. (About Tavistock. Rev. J. Pike Jones. Woods at Hatton, near Warwick. Perry. Cullum-wood, near Auchincruive, Ayrshire. Mr. Smith. Hook. Scot. E.)

S. April - May.†

* An aperient syrup prepared from the berries is kept in the shops. About an ounce of it is a moderate dose; but it generally occasions so much sickness and violent action that it is falling into disuse. The flesh of buds that feed upon the berries is said to be purgative. The juice of the unripe berries is of the colour of saffron, and is used for staining maps or paper. These are sold under the name of *French Berries*, (of which the better kind is produced by *R. infectarius*, and imported from the Levant. E.) The juice of the ripe berries mixed with alum, is the *sap green* of the painters, (*verde-rossie* of the French. E.); but late in the autumn the juice becomes purple. The bark affords a beautiful yellow dye. Goats, sheep, and horses browse upon this shrub. Cows refuse it. (Though commonly but a moderate sized shrub, Buckthorn has been known to attain the height of nearly twenty feet, and the diameter of one foot. Phil.Tr. v. xlvii. (The blossoms are particularly grateful to bees, and the leaves are voraciously devoured by goats: observations which apply to both the species. E.)

† From a quarter to half an ounce of the inner bark, boiled in small beer, is a diastic aperient. In d-opsies, or constipations of the bowels of cattle, it is a sure cathartic. The berries gathered before they are ripe, dye wool green. The bark dyes yellow, and, with preparations of iron, black. Charcoal prepared from the wood of either species is preferred by the makers of fine gunpowder. *Papilio Rhamni* and *Argus* live upon both species. (After some remarks on the predominance of yellow in our wild and cultured spring flowers, the author of *Journ. Nat.* observes,

“The very first butterfly, that will aloft repair,
And sport, and flutter in the fields of air,”

is the sulphur butterfly, (*Gonepteryx Rhamni*), which, in the bright sunny mornings of March, we so often see under the warm hedge, or by the side of some sheltered copse, undulating, and vibrating like the petal of a primrose in the breeze.” And here, without deviating into another province, we may be permitted to trace the analogy of nature, both in the animal and vegetable creation; more especially as typical of doctrines the most momentous. The voice of inspiration refers us to the miracles of the vegetable kingdom; and with reverence ought we to inquire, who deposited the little plantule in the body of the

EUONYMUS.* *Bloss.* five petals; *Caps.* coloured, five-sided, five-celled, five-valved: *Seed* veiled in a fleshy tunic.

E. EUROPEUS. Flowers mostly four-cleft: (petals acute: branches smooth and even. E.)

(*E. Bot.* 362—*Fl. Dan.* 1069. E.)—*Kniph.* 5—*Trag.* 983—*Ger.* 1284. 1—*Dod.* 783—*Lob. Obs.* 591. 2—*Ger. Em.* 1468. 1—*Park.* 241. 1—*J. B.* 1. 6. 201.

(*Branches* smooth, green, cylindrical; the younger quadrangular. *Leaves* having leaf-stalks, (not sessile,) serrated, smooth. *Fl. Brit.* E.) In Cornwall it has four stamens. *Stackh.* *Leaves* egg-spear-shaped, oppo-

seed? the corcle, the true *punctum-saliens* of vegetable life, to which the cotyledon is subservient; or so constituted with gemma as with equal certainty to renew the species, (for plants may not incorrectly be deemed both oviparous and viviparous, seeds being the vegetable eggs; buds the living foetuses, or infant plants); what power caused it to sprout upward into the green leaf, and downward into the root? Who placed the seed in the requisite position to do this?—And as Sturm observes, “the fields where corn is sown may serve to remind us of fields sown with a very different kind of seed. We may regard our bodies, when quietly deposited in the earth, as seeds which are to spring up and be matured in eternity. We have as little reason to expect that a grain of wheat placed in the ground will produce an ear of corn, as that our bodies reduced to dust shall become glorious bodies of light and immortality.

“The wheat, although it lies awhile in earth,
And seemeth lost, consumes not quite away;
But from that womb receives another birth,
And with additions riseth from the clay.
Much more shall man revive, whose worth is more:
For Death, who from our dross will us refine,
Unto that other life becomes the door,
Where we in immortality shall shine.” Wither.

Nor do the wonderful metamorphoses of insects less aptly illustrate that even that complex organic machine, the human body, after it has been reduced to atoms, may be again reared up in a new and more glorious form; and that, in truth, “nothing can be too hard for Jehovah.” Let it be remembered likewise that “all the butterflies which we see fluttering about in the summer months were originally caterpillars. Before they arrive at that stage of their existence, they pass through four different transformations. The first state of a butterfly is that of an egg; it next assumes the form of a loathsome crawling worm; after remaining some time in this state, it throws off its caterpillar skin, languishes, refuses to eat, ceases to move, and is shut up, as it were, in a tomb. In this state the animal is termed a *chrysalis*; it is covered with a thin crust or shell, and remains, sometimes for six or eight months, without motion, and apparently without life. After continuing its allotted time in this torpid condition, it begins to acquire new life and vigour; it bursts its imprisonment, and comes forth a butterfly, with wings tinged with the most beautiful colours. It mounts the air, it ranges from flower to flower, and seems to rejoice in its new and splendid existence. How unlikely did it seem that a rough hairy crawling worm, which lay for such a length of time in a death-like torpor, and enshrouded in a tomb, should be reanimated, as it were, and changed into so beautiful a form, and endued with such powers of rapid motion! In such transformations, we behold a lively representation of our own death and resurrection. *Dick.* p. 452. “A little while he shall lie in the ground, as the seed lies in the bosom of the earth; but he shall be raised again and shall never die any more.”—*Æcidium Rhmanni*, with capsules spreading, and seeds yellow, is frequently found on these plants; as also on *Euonymus Europæus*. Mr. Purton affirms that the berries of this species are often gathered for the former, though far less efficacious. They may be easily distinguished by attending to the number of seeds in the berry. E.)

• (Obviously from *eu* and *onymos*, *onymos*, to act upon well, or affect agreeably; though we think Martyn's suggestion, of the compound being used ironically, not satisfactory. E.)

sitc. *Fruit-stalks* from the bosom of the leaves, and supporting one or two pair of flowers. *Petals* greenish white. *Filaments* fixed in holes in the receptacle. *Fruit* angular, purplish; sometimes white. (*Capsule* four-celled. Mr. O. Roberts. E.)

SPINDLE-TREE. PRICKWOOD. GATTERIDGE-TREE. (Irish: *Feorus*. Welsh: *Piswydden*. E.) Woods and hedges. This singular and beautiful shrub is very common in Devonshire. (Also in the hedges of Dorsetshire. Pulteney. Hedge a little above the Dell rivulet, towards Longridge, near Painswick. Mr. O. Roberts. By Ullswater in Gowbarrow Park. Hutchinson. Castle Eden Dean, Durham. Derwent-water, at Barrow. Mr. Winch. Blackstone Rock, near Bewdley. Scott in Purt. Old fortification on Bryn Gwydryn, Anglesey, plentifully. Welsh Bot. In the King's Park, near St. Anthony's Well; about Craig-millar Castle. Mr. Maughan. Grev. Edin. E.) S. May—June.*

VIOLA. *Calyx* five-leaved, adhering to the blossom above the base: *Bloss.* five petals, irregular, spurred: *Caps.* one celled, three-valved.

(1) *Stemless.*

V. HIR'TA. (Leaves heart-shaped, as their stalks rough with hair: calyx obtuse. E.)

Walc.—Curt.—(E. Bot. 894. E.)—*Fl. Dan.* 618—*H. Ox.* v. 35. row 1. f. 4 —*Pet.* 37. 7—*Brunsf.* 137. 3—*Trag.* 558.

Root rather woody; throwing out young shoots, but which do not creep and strike root as in *V. odorata*. After the first flowers are withered, the plant continues, for a month or more, to throw out others entirely destitute of petals, or with only the rudiments of them, which never appear beyond the calyx, but with all the other parts of fructification perfect, and producing on the first crop perfect seeds. Curt. (*Blossom* drooping, pale greyish blue, sometimes streaked darker; scentless. *Capsule* globose, hairy. E.)

HAIRY VIOLET. (Welsh: *Gwilydd flewog*. E.) Shady places and hedges in calcareous soil. (About Charlton, Kent. E. Bot. Barton Hill, Bedfordshire. Abbot. Very common about Garn, near Denbigh. Mr. Griffith. Peninsula of Gower, Glamorganshire, not unfrequent. Mr. Dillwyn. Banks of the Tyne, at Wylam; and in Castle Eden Dean, Durham. Mr. Winch.) Limestone rocks on the common above Gordale, in going thence towards the Tarn. Whittaker's Craven. At Helford Ferry, Cornwall. Rev. J. Pike Jones. In Penmon Park, Anglesey, east of the Church abundantly. Welsh Bot. Bank near the toll, North Queen's-ferry. Mr. Neill. Grev. Edin. E.) P. March—April.

V. ODORATA. (Leaves heart-shaped, nearly smooth: scions creeping: calyx obtuse. E.)

* The berries operate violently on the bowels. They are fatal to sheep (and goats. E.) Powdered, and sprinkled upon the hair, they destroy vermin. (In France this shrub is sometimes called *Bonnet du prêtre*, from the form of the seed-vessel and the covering of the seeds affording a beautiful example of the *arillus*, which opens as the seeds ripen. E.) If the wood be cut when the plant is in blossom, it is tough, and is not easily broken; and in that state is used by watchmakers for cleaning watches, and to make skewers and tooth-picks. Goats and sheep eat it. Horses refuse it. Cows are so fond of the shoots in the spring as constantly to break down the banks of the field wherever a plant of it stands. Woodward. Musical-instrument makers use it for keys of organs, &c.; and, according to Linnæus, it furnishes the best charcoal for the limner. E.)

(*E. Bot.* 619. *E.*)—*Curt.*—*Ludw.* 175—*Walc.*—*Woodv.* 81—*Kniph.* 3—*Fl. Dan.* 309—*Reuealm.* 141. 1—*Blackw.* 55—*Sheldr.* 17—*Dod.* 156. 1—*Ger. Em.* 850. 2—*Pet.* 37. 3—*Ger.* 699. 1 and 2—*Lob. Ic.* i. 608. 2—*Ger. Em.* 850. 1—*Pet.* 37. 1—*Matth.* 1180—*Lonic.* i. 180. 1—*Trag.* 558. 1 and 2—*Fuchs.* 311—*J. B.* iii. 542.

Leaf-stalks nearly smooth. *Fruit-stalks* channelled on the the upper side above the floral-leaves. *Flowers* both with and without petals producing perfect seed. (The later flowers apetalous. *E.*) *Blossom* rich blue-purple, emitting a delicate odour.

SWEET-SCENTED VIOLET. (*Irish: Sail Covaib.* *Welsh: Millyn gwyn; Crinllys.* *E.*) *Gaelic: Sail-chuach.* *E.*) It is liable to change in the colour of the blossom from blue-purple to red-purple, pale flesh-colour, and white: (*V. odorata* β . *Fl. Brit.* *E.*) In the white specimens the lateral petals are sometimes without the hairs which grow on the inside claws in the purple kind, (and which would appear to afford a peculiar protection to the nectary; but the fragrance is the same. (A double purple variety of exquisite odour is frequently cultivated in gardens, flowering both in spring and autumn. The stalks of the late flowers are so short as scarcely to elevate the capsules above ground, and in such petals are often wanting. *E.*) Warm hedges and ditch banks, and in moist sheltered lanes; particularly in clay or marl. P. March—April.*

(The white variety may be gathered in profusion on the banks of a lane leading out of the valley near Chewton, Keynsham, Somersetshire, over the bridge to the upper Burnet road, according to the observation of the Editor: also between Dorking and Brockham, Surry; Mr. Winch: and in the brick-yard, Saltisford. Warwick. Perry. *E.*)

* The flowers and seeds are said to be mildly laxative; (also according to Bergius, slightly anodyne. *E.*) The powdered root, in doses from 40 to 80 grains, has a more violent effect. The petals give colour to the syrup of Violets, for which purpose they are cultivated in large quantity at Stratford-upon-Avon. (Mr. Purton, of Alcester, prepares 20 to 30 gallons annually, for the use of the druggists: chiefly from the petals of the wild Violets. The flowers are gathered by women and children, and the petals carefully picked from the calyx. *E.*) This syrup is very useful in many chemical investigations, to detect an acid or an alkali, the former changing the blue colour to red, and the latter to green. Slips of white paper, stained with the juice of the petals, and kept from the air and light, answer the same purpose.—(Luxury and refinement, by introducing artificial wants and lowering the standard of good principle, seem to have familiarized the polite Romans with every species of fraud and artifice: and it appears that even this fit emblem of purity was subjected to such despicable purposes: for it is related in Pliny, lib. xxxiii. c. 13.) among various other mal-practices), that the peculiar and valuable mineral called *Ceruleum*, used by painters, was counterfeited by a preparation coloured with a decoction of dried Violets," *fraus viola arida decocta,*" &c. *Argynnis Aglaia* feeds on this plant. The Turks make a Violet sugar from the flowers, and this dissolved in water, constitutes their favourite liquor, called *Sorbet*. Hasselquist. An infusion of Violets in goats' milk was formerly a favourite cosmetic with the Caledonian ladies, as recorded in certain Gaelic stanza. From the most ancient times this lovely flower seems to have been appropriated to the fair: hence we find the complimentary epithet *αβλεφαρος*, (having violet eye-lids), alluding to a custom still prevalent in Greece, of colouring the eye-lids blue. (Vid. Chandler's Travels). This fact affords the most probable solution of the Shakspearian passage, in which the Violet is described as

"Sweeter than the lids of Juno's eyes:"

Nor did Jezebel abstain from such mode of increasing her attractions, when (*Kings I. ix. 30.*) she "painted her face and tired her head:"—the former expression (by a more correct translation) meaning in the Hebrew, "imbued her eyes with paint," possibly the *stibium*, an antimonial preparation. Of such a practice various instances may be found recorded in

V. PALUS'TRIS. (Leaves kidney-shaped, smooth: root creeping. E.).
(E. Bot. 444. E.)—Curt. 217—Abbot. Fl. Bed. p. 190—Fl. Dan. 73—H.
Or. v. 35. row 2. f. 1—Pet. 37. 5—Allion. 2. 2.

the Old Testament, as Ezekiel xliii. 40—"Lo, they came, for whom thou didst wash thyself, *paintedst thine eyes*, and deckest thyself with ornaments."—Lord Bacon passes an elegant encomium on the Violet, and recommends those who wish to enjoy the delicate fragrance for more than twelve months to prepare vinegar with the flowers repeatedly infused. In a recent state they may be long preserved in apartments by placing them in saucers containing sand, moistened with salt and water. It is impossible to describe this general favourite, so intimately connected with fond associations and tender sentiments, without acknowledging her to be one of the most lovely satellites in the train of Flora. In the chivalrous age of the Troubadours, this retired emblem of modesty,

"The Violet blue that on the moss-bank grows,"

was selected as the prototype of the golden prize awarded annually on May-day to the most meritorious competitor in poetry; and thus was instituted at Toulouse a society which subsequently became more extended as the Academy of Floral Games. In times nearer our own, the celebrated Marmontel became a successful candidate for the Golden Violet, and has recorded the incident in a lively and not uninteresting tale. The *true blue* of the Violet has even been assimilated with fidelity, as thus in the old sonnet,—

"Violet is for faithfulness
Which in me shall abide;
Hoping likewise that from your heart
You will not let it slide."

The several exquisite passages of the Poet of Nature relative to this flower, though transcendent, are too well known to need insertion here; but the delicate pathos of Mrs. Radcliffe's stanzas may not be excluded;

"But yonder little Violet flower,
That, folded in its purple veil,
And trembling to the lightest gale,
Weeps beneath that shadowing bower,
Is just like love!
Though filled with dew its closing eyes,
Though bends its slender stem in air,
It breathes perfume and blossoms fair;
It feeds on tears, and lives on sighs,
Just like love!
And should a sun-beam kiss its leaf,
How bright the dew-drops would appear,
Like beams of hope upon a tear,
Like light of smiles through parting grief!
And just like love!"

Nor can we resist the following to

"The first-born Child of the early Sun.
* * * * *

She lifts up her dewy eye of blue,
To the younger sky of the self-same hue.
And when the Spring comes with her host
Of flowers, that flower beloved the most
Shrinks from the crowd, that may confuse
Her heavenly odour and virgin hues.
Pluck the others, but still remember
Their herald out of dim December—
The morning star of all the flowers,
The pledge of day-light's lengthen'd hours;
Nor, midst the Roses ere forget
The virgin, virgin Violet."

Or omit a few lines from the peasant-poet Clare:

(Smaller than the last, scentless. E.) *Calyx* membranous, white edge. *Petals*, the lower of a uniform pale purple colour; the lateral ones with one strong, and one faint purple line, and a cluster of short stiff bristles near the base; the upper with about eleven purple branched streaks. (*Leaves* sometimes very small, or purplish underneath, but increasing much after flowering. *Spur* very short. E.)

MARSH VIOLET. (Welsh: *Gwilydd y gors*. E.) Moist meadows, peaty and mossy bogs. In the north frequent. Near Witton-le-Wear. Mr. Bailey. Almond Park, Salop. Mr. Aikin. (Bog at Coleshill Pool. Bree in Purt. Near the bogs, side of Hampstead Heath, Middlesex. Mr. Bliss, in Park's Hampstead. In Anglesey with a white flower. Rev. Hugh Davies. Pentland Hills; King's Park. Greville. Needwood Forest, Staffordshire. Bogs on Birmingham Heath, since drained. E.)
P. April—May.

(2) *With a stem. Stipulæ entire.*

V. CANINA. Stem ascending as it attains full growth, channelled; leaves oblong-heart-shaped; (*calyx* acute. E.)

(*E. Bot.* 620. E.)—*Curt.* 108—*Walc.*—*Barr.* 695—*Lob. Ic.* i. 609. 1—*Pet.* 37. 6—*Trag.* 558. 3—*Dod.* 156. 3—*Lob. Ic.* i. 609. 2—*Ger. Em.* 851. 6—*H. Ox.* v. 7. 2—*Pet.* 37. 4—*Gars.* 622—*Park. Par.* 285. 1—*J. B.* iii. 544. 1.

At the first opening of the flower it has scarcely any stem, but one afterward grows up, and fruit-stalks proceed from it. *Leaves* sometimes rather hairy. *Stipulæ* fringed with hairs. *Blossom* pale blue, streaked, scentless, sometimes all white, at others the spur only white.

DOG'S VIOLET. (Welsh: *Pen y ncidr*; *Fioled y cwn*. E.) Shady places, heaths, hedge-banks.
P. April—June.*

Var. 2. Dwarf. Smaller in all respects. Spur of the blossom yellowish. Dill. in R. Syn.

“ *Violets*, sweet tenants of the shade,
In purple's richest pride arrayed,
Your errand here fulfil;
Go bid the artist's simple stain
Your lustre imitate, in vain,
And match your Maker's skill.” E.)

* (Roots emetic and cathartic. Woodville. Humble and unassuming as is the habit of the Dog's Violet, its deficiency has not escaped the animadversion of the poet.

“ Deceitful plant, from thee no odours rise,
Perfume the air, nor scent the mossy glade;
Although thy blossoms wear the modest guise
Of her, the sweetest offspring of the shade.

Yet, not like her's, still shunning to be seen,
And by their fragrant breath alone betray'd,
‘Veil'd in the vesture of a scantier green,
To every gazer are thy flowers display'd.

Thus Virtue's garb Hypocrisy may wear,
Kneel as she kneels, or give as she has given;
But ah! no meek, retiring worth is there,
“No incense of the heart exhales to heaven!” E.)

Ray 24, 1, at p. 478.

Stem very short. *Leaves* rougher and much smaller than the common kind, the largest not exceeding half an inch long, and one-third broad. *Leaf-scales* not so much fringed. *Flower* seldom more than one. I have carefully traced it through all its stages, up to the largest plants of *V. canina*. Woodw.

(*V. flavicornis*. Sm. Eng. Fl. *V. canina*, γ. Fl. Brit. E.) Pastures about Mitcham. Ray. Heaths, frequent. Mr. Woodward. (Near Betchworth Park, Surry. Mr. Winch. E.) May.

Var. 3. Leaves egg-spear-shaped. Flowers pale.

(*E. Bot.* 445.

Much smaller than the preceding, and quite smooth. Its diminutive size and peculiar appearance may possibly be occasioned by poverty of soil. E.)

CREAM-COLOURED VIOLET. *V. lactea*. Sm. E.) On mountainous boggy heaths. Found by Mr. Stackhouse at Pendarvis, Cornwall. (On the Wolds at Tunbridge. Mr. T. F. Forster, jun. Fl. Brit. Hilly pastures, near Peebles. Mr. Maughan. Hook. Scot. E.)

(3) *With a stem. Stipulae wing-cleft. Summit urn-shaped.*

V. TRICOLOR. Stem angular, spreading, branched: leaves oblong-egg-shaped, toothed: calyx smooth, only half the size of the blossom.

This plant produces almost endless varieties, of which the following are the most remarkable:

Var. 1. Blossoms white, or yellow-white; small, with a few purple streaks.

Matth. 1183—Ger. 704. 4 and 703. 1—Fuchs. 803—J. B. iii. 546. 2—Trag. 564—Lob. Ic. i. 611. 2—Ger. Em. 854. 4—H. Ox. v. 7. 10—Pet. 37. 9.

Corn-fields, gravel-pits, sides of paths, gardens, and cultivated grounds. A. May—Sept.

Var. 2. Blossoms blue, or purplish, with or without yellow or white, larger.

Kniph. 7—Riv. Pent. 122. *V. bicolor*—Pet. 37. 8—Barr. 757. 1 and 3.

Road-sides, in poor sandy and gravelly soil, common.

Var. 3. Blossoms of more than two colours.

Curt.—(*E. Bot.* 1287. E.)—Woodw. 252—Fl. Dan. 623—Pet. 37. 8, the 2 separate flowers.

Stem weak. *Stipula* terminating at the end in a leaf-stalk. *Fruit-stalks* compressed. *Floral-leaves* two on each fruit-stalk, halberd-shaped, each of the lobes with two teeth. *Summit* globular, hollow and open. In no plant may the process of impregnation be more distinctly seen. Linn. *Summit* ciliated on the lower part, and the hairs of the fringe nearly in contact with the anthers.

These varieties, improved by garden culture, often attain an extraordinary size, and the larger the more fragrant, with a velvety richness which

renders them peculiarly ornamental; as *Pansies** *Heart's-case*.† *Three faces-under-a-hood*. *Herb-Trinity*, or *Love-in-idleness*,‡ with more than

* *Pensee*, or *Penses a moi*; Think of me;

——— “and these are *Pansies*, that’s for thoughts:” Shaks.

Another *Forget-me-not* in

——— “the *Pansy* freakt with jet,
The glowing Violet.” Milton. E.)

† (——— “the garden’s gem,
Heart’s-case, like a gallant bold,
In his cloth of purple and gold.” L. Hunt. E.)

‡ (In Warwickshire, (observes Lightfoot), this plant is called *Love-in-Idleness*; and therefore doubtless is the herb to which the inventive fancy of Shakspeare attributes such extraordinary virtues in the person of Oberon, King of the Fairies, in the *Midsummer Night’s Dream*, Act. 2. Sc. 2.

“Yet mark’d I where the bolt of Cupid fell:
It fell upon a little Western (a) flower,
Before milk white, now purple with love’s wound,
And maidsens call it *Love-in-Idleness*.
Fetch me that flower, the herb I shewd thee once;
The juice of it, on sleeping eye-lids laid,
Will make or man or woman madly doat
Upon the next live creature that it sees.”

The *Heart’s-case* is considered sacred to St. Valentine: on which it is observed in *Flora Domestica*, that “it must be confessed to be a choice worthy of that amiable and very popular saint; for the flower, like love, is painted in the most brilliant colours, is full of sweet names, and grows alike in the humblest as well as the richest soils.” Another point of resemblance, too, (reveals the same agreeable authoress), that “where once it has taken root, it so pertinaciously perpetuates itself, that it is almost impossible to eradicate it.” The poet Herrick further excites our sympathy by informing us that

“Frolick virgins once there were,
Over-loving, living here;
Being here their ends denied,
Ran for sweethearts mad, and died.
Love, in pity of their tears,
And their loss in blooming years,
For their restless here-spent hours,
Gave them *heart’s-case* turn’d to flowers.”

“I used to love thee, simple flow’r,
To love thee dearly when a boy;
For thou didst seem, in childhood’s hour,
The smiling type of childhood’s joy.
But now thou only mocks’t my grief,
By waking thoughts of pleasures fled;
Give me—give me the wither’d leaf,
That falls in Autumn’s bosom dead.
I love thee not, thou simple flow’r,
For thou art gay, and I am lone;
Thy beauty died with childhood’s hour,
The *Heart’s-case* from my path is gone.” E.)

As if conscious of the source from which the splendid colours displayed in their blossoms, (whose petals may be contemplated as an assemblage of mirrors directed to one focus, in-

(a) Scene of the play fixed at Athens, eastward of Great Britain.

a dozen other pretty names. (Irish: *Gorman Searcagh*. Welsh: *Fioled dauwynebog*; *Llys y Drindod*; *Trilliw*. Gaelic: *Sail-chuach*. E.) Corn-fields and ditch banks. A. May—Sept.*

V. *LU' TEA*. Stem unbranched, upright, triangular: leaves fringed with hairs, lower ones heart-shaped, upper ones spear-shaped.

(*E. Bot.* 721. E.)—*Pet.* 37. 10—*H. Ox.* v. 7. 11.

From two to eight inches high. Root creeping. Upper leaves spear-shaped. *Stipule* strap-shaped, entire, or rather divided down to the base, but in *V. tricolor* they are hand-shaped. *Fruit-stalks* very long, axillary, upright, one-flowered. *Blossom* pale but bright yellow. In *V. tricolor* the leaves are hairy at the edges as well as elsewhere, but not fringed with strong hairs standing out like an eye-lash, as in *V. lutea*. The stem of the former is almost always branched, but I have never seen the latter branched, not even in the most luxuriant specimens.

(Var. 2. Two lower petals tipped with purple. Mr. Gough.

Var. 3. Upper petals blue. E.)

YELLOW MOUNTAIN VIOLET or YELLOW PANSY. (*V. lutea*. Huds. Ed.

1. With. Sm. Hook. *V. amana* of authors. *V. grandiflora*. Huds. Ed.

2. Lightf. not of Lim. E.) Mountainous pastures, in the north, and in Wales in peaty soil. Ray. About Attamine Cliffs, near Settle. Curtis. Hills above Dovedale. Mr. Woodward. Chatsworth, Park, Derbyshire.

tended to reverberate the rays of the sun on the parts of fecundation), are derived, and grateful for the vivifying influence, few plants pay more uniform homage to the fountain of light; following the course of the great luminary of nature from his uprising to his down setting; yet not absolutely without here and there a stiff-necked exception. Thus does this humble weed hold out a silent rebuke to the moral agent, to the stubborn and perverse generation, who too often refuse the act of adoration to the Creator himself, even while He daily "poureth His benefits upon them."

"God wills that lifeless things should give
Lessons to teach us how to live." E.)

* Dr. Strack says, that it infallibly cures the cutaneous complaints in young children, called *Crusta lactea*. He boils a handful of the fresh, or half a dram of the dried leaves, in half a pint of milk, and gives this milk morning and evening, for some weeks. *Med. Journ.* ii. p. 188. (As an instance of the mechanical contrivance by which nature enables plants to diffuse their seeds, Mr. J. Rennie well describes, (in *Mag. Nat. Hist.* v. i.) the process remarkable in the natural order comprising the various species of Violets. The seeds are attached to the inner part of the valves of the capsule, and remain so for some time after the valves, in the course of ripening, have separated and stood open. The influence of the sun's heat, however, causes the sides of each side to shrink and collapse, and in this state the edges press firmly upon the seed, which, from being before apparently irregular in its arrangement, comes into a straight line. The seeds are not only extremely smooth, polished, and shining, but regularly egg-shaped, so that when pressed upon by the collapsing edge of the valve, it slides gradually down the sloping part of the seed, and throws it with a jerk to a considerable distance. Another peculiarity in the *Vinaceæ* to facilitate the same end is also worthy of notice. Before the seed is ripe, the capsule hangs in a drooping position, with the persistent calyx spread over it as an umbrella, to guard it from rain and dews, which would retard the ripening; but no sooner is this completed, than the capsule becomes upright, having the calyx for a support. The erect position appears to be intended by nature to give more effect to the valvular mechanism for scattering the seeds, as it thus gains a higher elevation, (in some cases more than an inch), from which to project them; and this will give it, according to the laws of projectiles, a very considerable increase of horizontal extent, so that it is not unusual for the seeds to be scattered several feet from the parent stem. E.)

Mr. Whately. (Pastures about Longdale, near Oxtou, plentiful. Mr. Gouch. In the road between Settle and Malham Tarn, Yorkshire. Mr. Caley. On Ben Lawers and Craig Cailleach. Mr. Brown. In Bolden Bourn, Northumberland. Mell Fell and Ennersdale, and Borrowdale. Mr. Winch. Arthur's Seat, and Pentland Hills. Hooker. Abundant in fields near Cernioge, North Wales. B. Botfield, Esq. Road side between Holywell and St. Asaph. Mr. H. Christy. Fields about Buxton and Castleton covered with it in May.

Nearly allied to this species is *V. amœna* of Scotch Botanists. Its flower is large, and, according to Mr. Winch, always purple, never changing by cultivation. He also remarks that in Teesdale *V. lutea* varies from purple to yellow; but in Arkendale, in Yorkshire, it is always of the latter colour, yet none of these varieties put on the appearance of *V. amœna*. This elegant plant is found near the foot of Ben Lawers; and in the herbarium of the author are specimens greatly resembling it communicated by Mr. Brown from the same station, also from Craig Cailleach, so long ago as 1793; and then suspected to be a new species. By Prof. Hooker it is identified with *V. lutea*; while that accurate observer Mr. Robson refuses specific distinction even to *V. lutea*, stating, (from cultivation,) that not merely the colour of the blossom varies, but that the ciliate character of the leaves is inconstant. He therefore considers it only a var. *V. tricolor*.

In gardens what appears to be *V. amœna* flourishes in dense patches, displaying a profusion of large, rather palid, blue flowers through the months of May and June, and, if we mistake not, again in the autumn. E.) P. May—Sept.*

IMPA'TIENS.† Calyx two-leaved: Bloss. irregular: Nectary hood-like: Stam. cohering: Caps. superior, five-celled, opening elastically into five spiral valves.

I. NOLI-ME-TAN'GERE. Fruit-stalks many-flowered, solitary: leaves egg-shaped: stem swoln at the joints.

(*E. Bot.* 537. E.)—*Fl. Dan.* 582—*Riv. Tetr.* 244. *Impatiens*.—*Dod.* 659. 2—*Ger. Em.* 446. (erroneously printed 450.) 4—*Park.* 296. 5—*Trag.* 295—*Lonic.* i. 99. 4—*Col. Ecphr.* i. 150. 1—*Burr.* 1197—*Gars.* 414—*Ger.* 361. 3—*Lob. Adv.* 135, *Ic.* i. 318. 1—*J. B.* ii. 908.

(Stem about a foot high, succulent, somewhat pellucid, fragile. Cal. leaves yellowish green. E.) When the seeds are ripe, upon touching the capsule, they are suddenly thrown out with considerable force. Blossoms four to five, large, yellow; the lateral petals spotted with orange; by cultivation they change to pale yellow or purplish.

(YELLOW BALSAM. E.) QUICK-IN-HAND. TOUCH-ME-NOT. Moist shady places and banks of rivulets; chiefly in the north, but rare. Banks of Winandermere near Ambleside, near Rydal Hall, and other places in Westmoreland. By the side of Coniston Lake, Lancashire. Mr. Woodward. Near the foot-path leading from the Inn at Ambleside up the

* This plant has usually been considered *V. grandiflora* of Linnaeus, but Dr. Stokes, in the second edition of With. Arr., showed with how little propriety; and Dr. Afzelius has since informed me that our plant was entirely unknown to Linnaeus, whose *V. grandiflora* bears a much larger flower, and differs both in the spur and in the stipulæ.

† (Alluding to the singular irritability of the capsule. E.)

brook, towards the cascade. Mr. Watt. (Near Lyme Hall, Cheshire. Mr. G. Holme, in Bot. Guide. Banks of the river Camlet, at Morington, in the parish of Chirbury, five miles from Montgomery. Bingley. Sides of the river Avon near Salisbury. Dr. Maton. At the base of the old walls of Fountain's Abbey. Teesdale. In a moist glen at Castle-milk. Hopkirk. Hook. Scot. E.) A. July—Aug.*

RIBES.† *Petals* five, they and the stamens fixed on the calyx: *Style* cloven: *Berry* beneath, one-celled, many-seeded.

(1) *Without prickles.* CURRANTS.

R. RUBRUM. Bunches smooth, pendent: flowers rather flattened: (petals inversely heart-shaped. E.)

Woodw. 74—Fl. Dan. 967—(E. Bot. 1289. E.)—Ludw. 92—Sheldr. 91. 1, 2, 3, and 5—Walc.—Blackw. 285. 1. 24—Kniph. 2—Trag. 995—Matth. 108—Chus. i. 120. 1—Dod. 749. 2—Lob. Obs. 615. 2—Ger. Em. 1593. 1—J. B. ii. 97.

(Stem erect, smooth, with a deciduous cuticle. Leaves alternate, five-lobed, doubly serrated, on long fringed stalks, segments rounded. Calyx spreading. Floral-leaves shorter than the flower. Blossom greenish. Berries red, crowned with the shrivelled calyx. E.)

Var. 2. *Sweet Currants.* *Ribes vulgare fructu dulci.* Ray Syn. 456. Woods in Yorkshire and Leicestershire.

Var. 3. *Small Currants.* *Ribes fructu parvo.* Ray Syn. 456. Wimbledon Park, Surry; and many places in Lancashire.

RED CURRANT. Woods in the northern counties, (and in other hedges, and thickets, though not properly wild. E.) Both this and *R. nigrum* are found undoubtedly wild upon the banks of rivers; the former by the Tees, and the latter by the Skern, in many places. Mr. Robson. (Beside the Eden in Whinfield Park and Culgaith, Cumberland. Hutchinson. Side of the Avon, between Warwick and Emscote. Perry. Isle of Isla among brushwood, on the banks of the Sound. Lightfoot. Culross woods. Maughan. Hook. Scot. E.) S. May.†

* (Both the generic and specific names, (as also the most appropriate English designations), refer to the elasticity of the valves of the seed-vessel. The general structure of the flower resembles that of its congener *J. Balsama*, of the East and West Indies, from which we derive the various superb Balsams. Our more hardy annual might be worthy of introduction in the parterre, and by the art of floriculture would probably afford some agreeable transmutations. E.) The whole plant is considerably acid. Goats eat it. Horses, cows, and sheep refuse it. *Sphinx Elpenor* lives upon it.

† (Said to be of Arabian origin, and more properly belonging to a species of *Rheum*, but the name has been erroneously applied to the Currant and Gooseberry for centuries past. E.)

‡ (Generally cultivated, with berries red, pale pink, or white, in the gardens of the north of Europe; not so successfully in the south. White currants trained against walls grow to a large size, and are worthy of a place in the most elegant dessert. E.) The fruit is universally acceptable, either as nature presents it, or made into jelly. The juice is a pleasant acid in punch. If equal weights of picked currants and pure sugar be put over the fire, the liquor that separates spontaneously is a most agreeable jelly. Cows, goats, and sheep eat the leaves. Horses are not fond of them. Linnæus. (For home made wines no fruit is more acceptable than Currants. The red and white are extremely palatable; the black suitable to invalids. E.) This plant is very apt to be infested by *Aphis Ribes*, and then

(*R. PETREUM*. Clusters slightly downy; in flower upright, in fruit pendulous: flowers slightly concave: petals bluntish: bractæas shorter than the flower-stalks: stem erect.

E. Bot. 705.

Leaves like the preceding, but more downy beneath, particularly about the veins. *Flowers* greenish yellow, often reddish. *Bractæas* recurved, fringed. *Berries* bright red. Sm. Hook.

ROCK CURRANT. Mountainous woods of the north. We have been favoured with specimens by Mr. Winch, who has observed this species in hedges near the vicarage, Keswick: on the Wigton road beyond Liswick; and near Ormathwaite, Cumberland. Near Conscliffe, Durham. Mr. Robson. Woods near Airly-castle, by the river side. Mr. G. Don, in Hook. Scot. S. May—June. E.)

R. ALPINUM. Bunches upright: floral-leaves longer than the flowers.

(*E. Bot.* 704. E.)—*Fl. Dan.* 968—*Kniph.* 3—*Gunn.* ii. 2. 1 and 2—*Jacq. Austr.* 47—*J. B.* ii. 98.

(*Stem* erect. E.) *Leaves* segments spear-shaped, pointed, (polished at the back. E.) *Calyx* tubular, bluntly five-sided. *Stamens* shorter than the petals. *Pistil* as tall as the calyx. (*Berries* scarlet, mucilaginous and insipid. *Flowers* occasionally dioecious, as observed in a hedge not far from Ilam, in the north of Staffordshire, by John Sneyd, Esq. and, according to Mr. Robson, frequently so about Darlington. E.)

TASTELESS MOUNTAIN CURRANT. (Welsh: *Rhyfwyddlen myrddaw*. E.) (Hedges between Bangor Ferry and Bangor. Rev. H. Davies. Stayley Wood, in a place called Stocks, Cheshire. Mr. Bradbury. Woods about Darlington. Winch Guide. Woods and hedges in Yorkshire, about Fountain's Abbey, &c. E.) About Bradford. Mr. Woodward. In the wood on the south-west side of the pool at Edghaston, plentifully: (we suspect too artificial a spot. E.) S. May.*

R. SPICATUM. Spikes upright: petals oblong: floral-leaves shorter than the flowers. Linn. Tr.

(*E. Bot.* 1290. E.)—*Linn. Tr.* v. iii. pl. 21.

This is not a hybrid, for its seeds produce perfect plants. It approaches to *R. petraeum* of Jacquin in some respects, but the fruit of that species is pendent, which is not the case with this. The upright *spikes* are sufficient to distinguish it from all its congeners. Robs.

Discovered and described by Mr. Robson. He had the first tree from the neighbourhood of Richmond, Yorkshire, and afterwards found it by the

the green leaves become red, pitted, and puckered; (not unfrequently clammy and black from the *egesta* of innumerable insects. The branches are liable to be perforated by the caterpillar of *Sesia tipuliformis*. *Bombus pratorum* will also be found upon it. E.)

* The fruit has an insipid sweetish taste, and is only agreeable to children. The wood, being hard and tough, makes good teeth for rakes. Cows, goats, sheep, and horses eat the leaves. ("It is well worth observing how truly the insertion of the stamina into the calyx, as in the Class *Icosandria*, indicates a wholesome fruit. The fruits of *Pentandria Monogynia* are generally dangerous, many of them peculiarly fatal. *Ribes* is an exception, indicated by the insertion of its stamina, in which, though not in their number, it accords with *Icosandria*. With this simple guide a traveller in the most unknown wilderness might eat in safety, and thus the natural tree of knowledge leads to life." E. Bot. E.)

Tees, between Pierce-bridge and Gainford, in the county of Durham. Not now to be found in the latter station, but Mr. Winch suspects it may be the same as *R. petraum*, which has been observed near Pierce-bridge; also in Scot's Wood Dean, and in Teesdale Forest. E.)

S. April—May.

R. nigrum. Bunches hairy, (pendulous, with a separate flower-stalk at the base of each, E.): flowers oblong.

(*E. Bot.* 1291. E.)—*Ludw.* 91—*Kniph.* 2—*Fl. Dan.* 556—*Walc.*—*Sheldr.* 91. 7, fruit—*Woodv.* 75—*Blackw.* 285. 6—*Dod.* 749—*Ger. Em.* 1593—*J. B.* ii. 99. 1—*Park.* 1562. 2—*Park. ib.* 3.

(*Leaves* large, five-lobed, serrated, glandulose beneath, with a strong scent when rubbed. *Plant* three to five feet high, more spreading than *R. rubrum*. *Clusters* remarkable, says Sir J. E. Smith, for a separate stalk at the base, whose fruit is earlier and larger than the rest. *Berries* large, globose, black. E.) *Buds* glandular. *Floral-leaves* downy, and as long as the little fruit-stalks. *Flowers* downy. *Leaf-stalks* a little so, and beset with glands. *Flowers* turban-shaped. *Calyx* segments often of a rich brown red colour. *Stamens* sometimes more than five, and then there are fewer petals; so that when there are ten stamens there are no petals. This change of the petals into stamens is just the reverse of the process by which single flowers are known to become double, but it is the only instance of the kind that has occurred to my observation.

SQUINANCY BERRIES. BLACK CURRANTS. Wet hedges and banks of rivers. Alder swamps, Norfolk. Mr. Woodward. (Banks of the Teign, near Chudleigh Bridge, Devon. Rev. J. Pike Jones. On Costesy island, near Norwich. Mr. Rose. Fl. Brit. In Ravensworth Wood, near Newcastle; on the banks of Skern, near Darlington; and in Mr. Trontbeck's woods, Culgaith, Cumberland. Mr. Winch. Between Norwich and Yarmouth, by the river, in several places. Sir J. E. Smith. Auchindenny woods. Grev. Edin. E.) S. May.*

(2) *With prickles.* GOOSEBERRIES.

R. Grossularia. Branches prickly: fringe of the leaf-stalks hairy: berries hirsute: (segments of the calyx reflexed, shorter than the tube. E.)

(*E. Bot.* 1292. E.)—*Walc.*—*Kniph.* 1.

(A low bush, with prickly stems and branches. *Leaves* three-lobed, cut, slightly pubescent. *Leaf-stalks* hairy, often longer than the leaves.

* The berries have a very peculiar flavour, which many persons dislike; but their juice is frequently boiled down into an extract, with the addition of a small proportion of sugar; in this state it is called rob; and is much used in sore throats, chiefly in those of the inflammatory kind. The tender leaves tinge common spirits so as to resemble brandy. An infusion of the young roots is useful in fevers of the eruptive kind; and in the dysenteric fevers of cattle. Goats and horses eat the leaves. Linnaeus. A horse refused it. Stokes. All the species of *Ribes* are eaten by *Phalana Grossularia*, (whose black and white caterpillar destroys the foliage; but the most destructive enemy is a small saw-fly, which attaches its eggs in rows to the under sides of the leaves. Having consumed the leaf on which they were hatched, these little animals separate from each other, and the work of devastation proceeds with such rapidity, that frequently, where many families are produced on the same bush, nothing of the leaves is left but the veins, and consequently all the fruit is spoiled. *Andrena helvola* is likewise found upon it. E.)

Fruit-stalks one-flowered, nutant. Fl. Brit. E.) *Flower-scales* two, sometimes three, opposite, embracing the fruit-stalk. St. (*Flowers* pendulous, brownish green. E.)

ROUGH GOOSEBERRY. *Feaberry* in Cheshire, Lancashire, and Yorkshire. (*Berries* in Scotland.) (Welsh: *Grwyssodd*. E.) Hedges, and on old buildings and church towers. Woods and hedges about *Darlington*, common. Mr. Robson. (Hamilton Woods. Mr. Hopkirk. Hook. Scot. Oversley Wood, Warwickshire; in hedges at a distance from any house. Perry. Anglesey. Welsh Bot. E.) S. April.

(Var. 2. *Berries* smooth: fruit-stalks with a flower-scale of one leaf.

E. Bot. 2057. E.)—*Schmid.* 1—*Blackw.* 277—*Fuchs.* 187—*Trag.* 977—*Mutth.* 167—*J. B.* i. 6. 47—*Lonic.* i. 43. 1—*Dod.* 748—*Lob. Ic.* ii. 206. 1, *Obs.* 617. 2—*Ger. Em.* 1324—*Park.* 1560. 1.

• *Flower-scale* egg-shaped, embracing the fruit-stalk, generally with three divisions.

(Since no permanent specific difference has been ascertained betwixt the smooth and rough varieties of this plant, it seems unreasonable that they should be longer separated. The flower-scales afford no invariable mark; and we have Mr. Robson's authority to state that seeds from the same plant will produce both rough and smooth Gooseberries. E.)

SMOOTH GOOSEBERRY. (Welsh: *Grwyfynydd*. *Ribes Uva-crispa*. Linn. Fl. Brit. With. Ed. 4. Hull. E.) Woods and hedges. Parker's Piece, Gorton, Shelford, Ditton, Harston church-yard, and Triplow, Cambridgeshire. Relhan. (In Anglesey, frequently at a distance from gardens, and abundant on the Warren Bulkeley road in 1806, the second year after it was formed. Welsh Bot. E.) Road between Newport and the Light-house in the Isle of Wight, in a hedge far from any garden.

S. April—May.*

* (The berries of both kinds, which by cultivation vary in colour from white to yellow, green, red, purple, and black, and in size from the dimension of a pea to that of a walnut, afford a very favourite and wholesome fruit, either fresh or preserved. The seeds of Gooseberries when washed, dried, roasted, and ground, are a good substitute for coffee. The bright red spots which often affect the leaves, and sometimes distort the young berries, are occasioned by *Aecidium Grossulariæ*; "Peridium bursting at the apex, the mouth generally dentate: sporidia dust-like." Grev. Scot. Crypt. 62. *Cimex baccharum* is often met with on Gooseberry bushes. Indeed few plants are more subject to the depredations of insects, especially from the caterpillars of *Tenthredinidæ*, *Papilivæ*, and *Phalænæ*, devouring both leaves and buds. The best method of checking this inconvenience is by deep digging around the bushes in the winter season, encircling the main stem with a band of tar, and hand-picking occasionally during spring and summer. The depredations of birds, especially of that insidious plunderer the bull-finch, (*Loxia pyrrhula*), upon the embryo blossoms while yet wrapped up in the buds, are not so readily prevented; as observed in Journ. Nat. "when the cherry buds begin to come forward, they quit the gooseberry, and make tremendous havoc with these, and the plums next form a treat. The idea that this bird selects only such buds as contain the embryo of an insect, to feed on, and thus free us of a latent colony of caterpillars, is certainly not correct. The mischief effected by bull-finches is greater than commonly imagined, and the ground beneath the tree on which they have been feeding is commonly strewed with the shattered buds, the rejectments of their banquet; and we are thus deprived of a large portion of our best fruit by this "pick-a-bud," as the gardeners call it." These plants may be trained on espaliers to an extent of many feet, with improved fruit. An agreeable wine is prepared from the berries, which much resembles Champagne: and when gathered green no fruit makes a better tart than the Gooseberry. E.)

HEDERA.* *Petals* five, broadest at the base: *Berry* four or five-celled, three to five-seeded, juiceless, encircled by the calyx.

H. HELIX. Leaves, some ovate, others lobed.

Curt.—*Fl. Dan.* 1027—(*E. Bot.* 1267. *E.*)—*Sheldr.* 103—*Blackw.* 188—*Trag.* 801—*Ger.* 708. 2 and 1—*Fuchs.* 722 and 723—*J. B.* ii. 111. 1 and 2—*Dod.* 413. 1 and 2—*Lob. Obs.* 336. 2, and 337. 1—*Ger. Em.* 857. 1 and 2—*Park.* 678. 1, and 679. 4—*Matth.* 624 and 625.

When it trails on the ground its *branches* are small and weak, and its leaves have three lobes. *Curt.* In which state it does not produce fruit, and has been called *Barren* or *Creeping Ivy*, (in contradistinction to the *Climbing* or *Berried Ivy*, to which the term *Helix* is more especially appropriate. *E.*) When it climbs up walls or trees, it grows much stronger, and the leaf changes to egg-shaped. *Curt.* (This extraordinary diversity in the form and size of the leaves may perplex the novice, and indeed induced the old authors to conjecture specific distinction. The fibrous supports of Ivy are peculiar *tendrils*, not roots; though they become real roots when trailing on the earth. *Leaves* glossy, from one to several inches over. *Blossoms* greenish white, forming aggregate, many-flowered, nearly spherical umbels. *Berries* black; sometimes mealy: *Stamens* standing wide apart, longer than the petals. *E.*)

COMMON IVY. (*Irish: Oihin. Welsh: Eidlew; Iorwg; Aedorw. Gaelic: Eidhionn-na-craige. E.*) Woods, hedges, and old buildings. S. Oct.†

* (A name conferred on this plant by Pliny; and ingeniously conjectured to be a corruption of *adherit*, it adheres, or clings, to other trees, &c. *E.*)

† The roots are used by leather-cutters to wet their knives upon, and when large form boxes, and even tables. Apricot and peach trees, covered with Ivy during the month of February, (perhaps merely on the principle of protection, for which purpose Fern, or Fir branches, are equally serviceable, *E.*) have been observed to bear fruit plentifully. *Phil. Tr. No.* 475. The leaves have a nauseous taste. (An ointment is made from them in the Highlands to cure burns. *E.*) Haller says they are given in Germany as a specific for the atrophy in children, and they may be advantageously applied to issues. The berries have a little acidity. They operate violently. (Powdered, they were given with vinegar, during the London plague, with good success, as a sudorific. Boyle. *E.*) In warm climates a resinous juice exudes from the old stems, (said to be strong smelling and attractive to fish. *E.*) Horses and sheep eat Ivy. Goats and cows refuse it. Linn. (In winter sheep would seem to prefer it to grass, eagerly devouring it, nor will deer refuse it. *E.*) In severe weather it is stripped off the trees as food for cattle. Mr. Hollefer. (Cows kept at winter grass eat it with considerable avidity. Mr. Oade Roberts.) Though Ivy must be acknowledged to injure young growing timber, (by its mechanical stricture rather than the extraction of nutriment, which prevents due expansion, and in some small degree, possibly, by impoverishing the soil immediately adjacent;) Mr. Repton, in Linn. Tr. v. xi. endeavours to prove that it is not detrimental to trees; that its sustenance is wholly obtained by means of its own root; (an assertion which seems to be confirmed by the fact that the largest plants of Ivy, when cut through at the bottom of their stems, immediately die; and also from their flourishing equally well over *innutritious* stone walls, towers, &c.); that it often operates as a preservative from extreme cold; and that some of the largest-sized and soundest forest trees are such as have been entwined with ivy for a vast length of time. He insists that if this ornamental evergreen were subject to less general persecution, much benefit would arise both to the agriculturist and the sportsman despite the malediction of Laughton:

“No flower can bear the Ivy’s shade,
No tree support its cold embrace.”

ILLECEBRUM.* *Calyx* five-leaved, cartilaginous: *Bloss.* none: *Summit* simple: *Caps.* five-valved, single-seeded.

To the eye of taste, as an ornamental evergreen, Ivy must remain unrivalled; by its aid the bare walls of ruins may be renovated with the freshness of nature, shedding beauty over desolation:

“The little chapel with the cross above,
Upholding wreaths of Ivy.” Keats.

And whatever may be the apprehensions of the timber-merchant, in situations where it is allowable to substitute decoration for utility, its graceful wreaths will be held sacred,

——— “recompensing well
The strength they borrow with the grace they lend.”

That Ivy constituted a favourite embellishment of Roman villas we learn from Pliny; for the Consul, in a letter to Apollinaris describing his principal seat in Tuscany, represents the trunks of his Plane trees to be entwined with it, and extending so as to connect them together. Hasselquist states that about Smyrna it forms hedges, and ornaments every garden: and Curtis adds a practical hint, viz. that “few people are acquainted with the beauty of Ivy when suffered to run up a stake, and at length to form itself into a standard; the singular complication of its branches, and the vivid hue of its leaves, give it one of the first places amongst evergreens in a shrubbery.” We would suggest as an additional motive for its cultivation, to those who prefer to a cheerless deathlike silence, the vocal grove animated with life and enjoyment, that the shelter thus afforded from wintry storms, the berries as food during the most inclement seasons, (remaining uninjured by frosts), and the covert in which to secrete their nests and rear their young, prove most attractive to the feathered race, and will often reverberate the soft cooing of the Cushat-dove, the mellow notes of the Thrush, and the varied trill of innumerable minor songsters. As presenting the most natural illustration of a generous friendship, Ivy must ever prove an object of agreeable contemplation. Thus does it attach itself even to the destitute; and when death has smitten its protector, it again restores him to the honour of the forest; when he no longer lives, it causes him to revive by decorating his pallid branches with garlands of flowers and festoons of perennial verdure.

“Hast thou seen in winter’s stormiest day,
The trunk of a blighted oak,
Not dead, but sinking in slow decay
Beneath time’s resistless stroke,
Round which a luxuriant Ivy had grown,
And wreathed it with verdure not its own.

——— I can draw from this perish’d tree
Thoughts which are soothing and dear to me.
That which is closest, and longest clings,
Is alone worth a serious thought!
Should ought be unlovely which thus can shed
Grace on the dying, and leaves on the dead?” B. Barton.

Ivy is found in almost every situation, and generally requires a support. Foster, in his admirable *Essays on Decision of Character*, has deduced a striking inference from this well-known habit of the plant. “I lately noticed,” says he, “with some surprise, a branch of Ivy, which being prevented from attaching itself to a rock beyond a certain point, had shot off, with a bold elastic stem, with an air of as much independence as any branch of oak in the vicinity. So a human being, thrown by cruelty, injustice, or accident, from all social support and kindness, if he has any vigour of character, and is not in the bodily debility of childhood or age, will begin to act for himself, with a resolution which will appear like a new faculty. And the most absolute inflexibility is likely to characterise the resolution of an individual, who is obliged to deliberate without consultation, and execute without assistance.” Towards the decoration of churches at Christmas, Ivy (its berries often

* (From *illecebra*, an allurement, as enticing the Simpler into marshes and bogs. E.)

I. VERTICILLATUM. Flowers in whorls, naked : stems trailing.

Kniph. 12—(E. Bot. 895. E.)—Fl. Dan. 335—Vail. 15. 7—J. B. iii. 378. 2
—Pet. 10. 7—Ger. Em. 563—Park. 1333—Ger. 449. 1.

lancifully coloured) has been time immemorial a liberal contributor ; a custom traced through Druidism to various solemnities of Pagan worship, and, as we have elsewhere ventured to suggest, originating in a yet more remote and sacred source. Vid. Box. Pity it were to dissipate agreeable delusions ; but how far the prevalent opinion, that our plant is the same with the species of classical notoriety,

“ An Ivy-wreath, fair learning's prize,
Raises Mæneas to the skies : ” Hor.

or which composed the coronal of Homeric Bacchus, and to which was attributed the happy power of preventing intoxication, may, perhaps, be questionable. We learn from Bauhine and Tournefort, that the plant emphatically termed the *Poet's Ivy* in the Archipelago, the *Hederæ Dionysias*, consecrated to Bacchanalian festivity, is remarkable for its golden berries, whence termed *Chrysocarpus*. “ *Hedera nigra* ” of Virgil may be our common Ivy ; and it is possible to suppose that the “ *Pallentes Hederae* ” of the same illustrious poet (Georg. iv. 124), might be merely descriptive of the gleamy light playing upon the glossy foliage ; or perhaps, with equal or greater probability, of the variegated kinds, or, more especially, the yellow-berried, so common in Thrace and at Constantinople : but we are at a loss to reconcile to our conceptions of Ivy, the

“ Candidior cyncis Hederae formosior alba,”

described in the 7th Eclogue, and also recognised by Dioscorides, Theophrastus, and Pliny. The refined taste of an elegant writer rejects altogether the appropriation of our sombre production to the rosy God of revelry ;

“ Oh ! how could fancy crown with thee,
In ancient days the God of wine,
And bid thee at the banquet be
Companion of the vine ? ”

Thy home, wild plant, is where each sound
Of revelry hath long been o'er ;—

But thou art there ;—thy foliage bright,
Unchanged, the mountain storm can brave ;
Thou that wilt climb the loftiest height,
And deck the humblest grave.

And still let man his fables rear,
August in beauty, grace, and strength,—
Days pass ;—thou, Ivy, never sere,
And all is thine at last ! ”

Sphæria Hederae is parasitic upon the leaves of Ivy. Bees and other winged insects may be observed swarming about the flowers very late in the autumn ; and, indeed, it is the last flower that supports the hymenopterous and dipterous insects. As we find remarked in the interesting “ *Journal of a Naturalist*, ” “ In the month of October the Ivy blooms in profusion, and spreading over the warm side of some neglected wall, or the sunny bark of the broad Ash, its flowers become a universal banquet to the insect race. The great Black fly, (*Musca grossa*), and its numerous tribe, with multitudes of small winged creatures, resort to them ; and there we see those beautiful animals, the latest birth of the year, the Admiral, (*Vanessa Atalanta*), and Peacock, (*P. Io*), butterflies, hanging with expanded wings like open flowers themselves, enjoying the sunny gleam, and feeding on the sweet liquor that distils from the nectary of this plant.” That ingenious naturalist, the Rev. Gilbert White, of Selborne, observes : “ In heavy fogs, trees are perfect alembics ; by condensing the vapour, distilling much water which trickles down the twigs and boughs. Ivy leaves are smooth, and thick, and cold, and therefore condense very fast, and besides evergreens imbibe very little. These facts may furnish the

Leaves oval, keeled, fleshy, smooth, scarcely stalked. *Upper whorls* crowded together, by no means so far asunder as represented in Fl. Dan. Woodw. *Plant* about three inches high. *Flowers* reddish or nearly white, (numerous, crowded together. *Calyx* awned, permanent. E.)

WHORLED KNOT GRASS. Marshes and wet pastures. (On the turf between Mean and the Land's End. Dr. Forbes. E.) In Cornwall and Devon, not uncommon. (On the road side betwixt Elnal and Ranton Abbey, Staffordshire. E.) P. July—Sept.

GLAUX.* *Cal.* one leaf, coloured : *Bloss.* none : *Caps.* one-celled, five-valved, five-seeded.

G. MARITIMA.

(Hook. Fl. Lond. 188. E.)—E. Bot. 13—Lob. Obs. 227. 2—Ger. Em. 562—Park. 1283. 2—Fl. Dan. 548—Ger. 448.

(*Root* of thick, flexuose fibres. *Stem*, three or four inches high, often trailing, and reddish, little branched, cylindrical, thickly set with leaves. *Leaves* opposite, oblong, very entire, smooth, pale underneath, of a saline taste. *Flowers* at the base of the leaves, solitary, nearly sessile, flesh-coloured.

SEA MILKWORT. BLACK SALTWORT. (Welsh : *Hel-las*. E.) Frequent on the sea shores; salt marshes, not uncommon. Salt marsh at Ingestre, Staffordshire. Mr. Bagot. Norfolk coast. Mr. Woodward. Cornish coast. Mr. Watt. (North Shore, and Knott's Hole, near Liverpool. Dr. Bostock. Sea coast, Abbey Holm, Cumberland. Hutchinson. Fairlie, on the coast of Ayrshire. Graves, in Curt. Anglesey. Welsh Bot. Shores of the Frith : about Burnt-island, &c. Greville. Side of the river near Teignmouth. Mr. Fred. Russell. E.) Below King's Weston, near Bristol. In Portland Island. P. June—July.†

THESIUM. *Cal.* coriaceous, of one leaf, on which the stamens grow : *Seed* one, beneath.

T. LINOPHYLLUM. Spike branched : floral-leaves ternate : leaves strap-spear-shaped : calyx tube very short.

Dicks. H. S.—E. Bot. 247—Ger. Prov. 17. 1—Relh. at. p. 99—H. Ox. xv. 1. 3—Kniph. 9—Clus. i. 324. 1—Park. 459. 6—Ger. 442. 7—Pet. 9. 5—J. B. iii. 461. 3.

Floral-leaves cloven into three, the middle segment long and pointing downward. Woodw. *Stems* ascending, mostly branched, from three to five inches high, angular, leafy. *Root* yellowish. *Flowers* mostly in bunches,

intelligent with hints concerning what sort of tree should be planted round small ponds wished to be perennial. Deciduous trees entwined with much Ivy, seem to distil the greatest quantity." Irish Ivy, a variety with larger leaves, and generally of more luxuriant growth, is a valuable acquisition for ornamental purposes, and said to have been first introduced into England by Earl Camden. It may be well to remind those who are desirous of rapid growth in Ivy, that the application of manure to the roots proves a very successful stimulant. According to Warner, some portions of the Ivy of which the venerable ruins of Glaston Abbey were so injudiciously dismantled by sacrilegious hands, in 1607, measured two feet in diameter. E.)

* (From *glauco*, a sea-green colour. E.)

† Cows eat it. Mr. Atkinson states that it is much used as a pickle.

but sometimes the lower ones forming a panicle. *Calyx* four or five-cleft, widely conical. *Stamens* four or five. (*Leaves* turned to one side, about an inch long. *Clusters* terminal. E.)

(BASTARD TOAD FLAX. E.) Dry heaths and hills in calcareous soil. Common in Dorsetshire. Dr. Pulteney. Chalk cliffs on the south-west side of the Isle of Wight. Dr. Stokes. Near Bury, Suffolk. Mr. Woodward. In the loose sand by the ferry leading to Portland Island. Mr. Stackhouse. (Dry pastures at Stanton St. John, Oxfordshire. Sibthorp. On Box Hill. Mr. Winch. Shepscombe Hill, Painswick. Mr. O. Roberts. E.) P. June—July.

VIN'CA.* *Bloss.* salver-shaped, oblique: *Seed-vess.* two upright follicles: *Seeds* naked.

V. MINOR. Stems trailing: leaves spear-egg-shaped, smooth-edged: flowers on fruit-stalks: (segments of the calyx lanceolate. E.)

Curt. 172—(*E. Bot.* 917. E.)—*Ludw.* 75—*Kniph.* 1—*Sheldr.* 22—*Blackw.* 59—*Dod.* 405—*Lob. Obs.* 360. 1—*Ger. Em.* 894. 1—*Park.* 381. 1—*J. B.* ii. 131—*Matth.* 956—*Walc.*—*Trag.* 394—*Fuchs.* 360.

(Stems smooth, cylindrical, extending. *Leaves* dark shining green, remaining so through the winter. E.) *Flowering-stem* upright in the spring, but in autumn it bears flowers on the shoots of the year, which are procumbent. *Woodw.* *Calyx* shorter than the tube of the blossom. *Style* inversely conical. *Upper summit* woolly. *Leaf-stalks* short. *Blossom* blue or white, (axillary, solitary. E.)

LESSER PERIWINKLE. (Welsh: *Erlysg*, &c. *Ueïaf*. E.) Woods and hedges. Near Hampstead. Earsham Wood, and hedges near Diss, plentifully. Mr. Woodward. Rainsal Brow, near Manchester, abundant. Mr. Calcy. (In Selborne-hanger and Shrub-wood, Hants. White's Nat. Hist. At Shillingford, near Exeter, by the road side. Rev. J. Pike Jones. Toxteth Park, near Liverpool, and in profusion at the Nut woods, near Hale. Dr. Bostock. About Hunningham church, near Norwich. Sir J. E. Smith. Bank Side in Longridge, and the Beech lane, Painswick. Mr. O. Roberts. Auchindenny and Colinton Woods. Mr. Arnott, in Grev. Edin. In a lane leading from the Larches to the Alcester road, near Birmingham. E.) P. April—May.†

V. MAJOR. (Stems ascending, leaves egg-shaped, fringed: flowers on fruit-stalks: segments of the calyx bristle-shaped, elongated. E.)

* (From *vincio*, to bind; its runners trailing round other plants: or to those who prefer a more interesting association,* we would intimate that of such was formed in ancient times the bridal zone which none but the bride-groom was privileged to untie. In modern Italy it is said to be appropriated to a far different usage, that of enwreathing deceased infants, and is hence called "*Fior di Morto*." E.)

† The fruit seldom comes to maturity, and Cæsalpinus seems the only one that has observed it in this state. It may, however, be easily obtained by planting *V. major* in a pot, where the roots not having free room to extend themselves, the juices are more copiously propelled towards the pistil, which then expands into well-formed seed vessels. Tournefort. (The medicinal qualities so highly extolled by the older writers, are no longer considered worthy of record. It may probably prove little more than astringent. Where undisturbed, especially on a sunny aspect, it quickly extends into large dense patches, ornamental to the shrubbery or wilderness, both for long-continued blossoms during the spring months, and its agreeable verdant foliage in winter. A white-flowered variety with variegated leaves is frequent in gardens: also one bearing double purplish blossoms. E.)

(*E. Bot.* 514. *E.*)—*Curt.* 222—*Tourn.* 45—*Walc.*—*Clus.* i. 121. 2—*Dod.* 406. 1—*Lob. Obs.* 360. 2—*Ger. Em.* 894. 2—*Park.* 381. 2—*J. B.* ii. 132—*Garid.* 81.

(Larger than the last in all its parts. *Leaves* very glossy, evergreen. *E.*) *Leaves* minutely fringed with hairs at the edge. *Calyx* as long as the tube of the blossom. *Blos. tube* woolly within, just above the anthers. *Leaf-stalks* long. *Blossom* blue, sometimes with a blush of purple, twice as large as the preceding. *E.*)

GREATER PERIWINKLE. (Welsh: *Llowrig*; *Perfagl fwyaf*. *Vinca pervinca*, *herba semperviret*. *Plin.* *E.*) Woods and hedges, but rare. A grove in Thorpe, by Norwich. Mr. Woodward. Isle of Wight, to the south of Yarmouth; plentiful along the Under-cliff. (In lanes about Charlton and Dover. Southrop, North-end, Northamptonshire, under a wall. Moreton. In a lane leading from Battersea Meadow to Wandsworth. Blackstone. Banks of the Wharfe, near Wetherby. Mr. Brenton, in *Bot. Guide*. Dundas Hill; Mr. Neill: Collington Woods. *Grev. Edin.* In a wood near Tyfry, Anglesey. *Welsh Bot.* About King's Coughton, and Oversley, Warwickshire. *Purton.* *E.*) P. May.*

DIGYNIA.

HERNIA'RIA.† *Cal.* with five divisions: *Bloss.* none: *Stam.* five perfect, and five imperfect: *Caps.* one-seeded, (cor-
ticated. *E.*)

H. GLA'BRA. Plant smooth: (herbaceous. *E.*)

Fl. Dan. 529—*E. Bot.* 206—*Trug.* 527—*Matth.* 953—*J. B.* iii. 378. 3—*Ger.* 454—*Dod.* 114—*Ger. Em.* 569—*Blackw.* 320—*Pet.* 10. 9—*Park.* 447. 9.

Stem ligneous and knotted at the bottom. *Flowers* very numerous, apetalous. *Floral-leaves* triangular, fringed. This is undoubtedly a perennial, and its *leaves* are generally fringed at the edge, so that *H. glabra* and *hirsuta* may be the same plant. *Stackh.* (*Stems* from four to eight inches long, trailing on the ground. *Flowers* yellowish, small, in clusters. *Leaves* egg-shaped, very entire, lower ones opposite, upper ones alternate. *Cal.* edged with white. *E.*)

SMOOTH RUPTURE-WORT. Gravelly soil. Lizard Point, Cornwall; Hudson: (on a low hedge under the Light-houses. Near Newmarket. *Rev. Mr. Hemsted.* Sandy shores, Portsmouth. *Martyn.* On a heath near Sleaford, on the road to Grantham. *Rev. G. Crabbe*, in *Bot. Guide*. On the coast at Weston-super-mare, Somerset. *Sole.* At Kedgworth, Cornwall. *Rev. J. Pike Jones.* *E.*) P. July—Aug.†

(Var. 2. *Hirsuta*. Plant rough with hair.

(*E. Bot.* 1379. *E.*)—*Sheldr.* 110—*Pet.* 10. 10—*J. B.* iii. 379. 1—*H. Or.* v. 29. row 1, 2, 6.

* (This beautiful plant may be readily trained to cover fences or low walls, and thus disposed proves exceedingly ornamental. *E.*)

† (From its supposed efficacy in curing *hernia*. *E.*)

‡ Rather saltish and astringent. It increases the secretions by the kidneys. The juice removes specks in the eye. Cows, sheep, and horses eat it. Goats and swine refuse it.

(Only differing from the preceding in the stem, under surface of the leaves, and calyx being thickly set and rough with hairs: from which the preceding is not always perfectly exempt.

HAIRY RUPTURE-WORT. *H. hirsuta*. Linn. Sm. With. Ed. 4. E.) Gravelly soil. Colney Hatch, near Barnet. Cornwall. P. July—Aug.

CHENOPODIUM.* *Cal.* with five clefts and five ribs: *Bloss.* none: *Seed* one, lenticular, superior, partially covered by the closing calyx.

(1) *Leaves angular.*

C. **BONUS-HENRICUS.** Leaves triangular-harrow-shaped, very entire; spikes compound, leafless.

Curt. 184—(*E. Bot.* 1033. E.)—*Ludw.* 185—*Fuchs.* 463—*J. B.* ii. 965. 2—*Fl. Dan.* 579—*Ger.* 259—*Trag.* 217—*Matth.* 598—*Dod.* 651—*Lob.* obs. 129. 2—*Ger. Em.* 329—*Park.* 1925. 6—*H. Or.* v. 30. row 2. n. 1. figure 3d—*Pet.* 7. 12—*Blackw.* 311—*Munt.* 191.

(*Stem* about a foot high, rather thick, striated. *Leaves* large, dark-green, numerous. *Spikes* terminal and axillary, crowded. *Blossoms* greenish. E.)

(PERENNIAL GOOSE-FOOT. GOOD KING HENRY. E.) WILD SPINACH. (Irish: *Keahruha luhain*. Welsh: *Sawdl y crydd*; *Ilys y gwrda*. E.) Amongst rubbish, on road sides, and walls, and sometimes in pastures.

P. May—Aug.†

C. **URBICUM.** Leaves triangular, somewhat toothed; bunches crowded, quite straight, laid close to the stem, very long.

(*E. Bot.* 717—*Fl. Dan.* 1148. E.)—*Pet.* 8. 8.

Formerly suspected to be a variety of *C. rubrum*. (There seems no very obvious distinction except in the bunches; unless the seed be observed, and this, as pointed out by Curtis, will readily determine between the two species; the ripe seeds of *C. rubrum* being no larger than grains of writing sand, whereas those of *C. urbicum* are at least five times that size, or about as big as rape seed. E.) *Calyx* smaller. Woodw. *Leaves* widely and deeply notched.

UPRIGHT GOOSEFOOT. (BROAD-POINTED BLITE. E.) On dunghills, ditch banks, and amongst rubbish. A. Aug.—Sept.

* (From *κην*, *κηνος*, a goose, and *πους*, a foot; probably alluding to a fancied resemblance of the leaves of certain species to the foot of a goose. E.)

† Cultivated as spinach about Boston, in Lincolnshire, very generally. *Curt.* The young shoots peeled and boiled, may be eaten as asparagus, which they resemble in flavour. They are gently laxative. The leaves are often boiled in broth. The roots are given to sheep that have a cough. Goats and sheep are not fond of it. Cows, horses, and swine refuse it. (How the name once idolized in France came to be applied to this vegetable of mean aspect, it may not be easy to trace; but, is the opinion of a French writer, "This humble plant, which grows on our plains without culture, will confer a more lasting duration on the memory of HENRI QUATRE, than the statue of bronze placed on the Pont Neuf, though fenced with iron, and guarded by soldiers." E.)

344 PENTANDRIA. DIGYNIA. CHENOPODIUM.

C. RU'BRUM. (Leaves triangular, somewhat rhomboid, toothed, and sinuated; bunches upright, compound, somewhat leafy, shorter than the stem; seeds minute. E.)

Curt.—*Fl. Dan.* 1149—(*E. Bot.* 1721. E.)—*Fuchs.* 653—*J. B.* ii. 975. 2—*Dod.* 616. 1—*Ger. Em.* 328. 1 and 2—*Matth.* 462—*Lob. Obs.* 128. 1—*Park.* 749. 8—*H. Ox.* v. 31. row 2. 2—*Pet.* 8. 6.

When full grown, read and spreading. *Stems* lying on the ground. *Leaves* thick, shining. *Spikes* with sessile tufts of flowers, interspersed with strap-shaped leaves. *Linn.* *Bunches* short, close, branched. *Woodw.* *Leaves* with their leaf-stalks as long or longer than the branches that rise from them; no shining spangles upon them or the calyx, so as to give the plant a white appearance, but when held against a strong light an infinite number of shining particles appear. *Bunches* sessile in the bosom of the upper leaves.

RED GOOSEFOOT. SOWBNE.* (SHARP-POINTED BLITE. Irish: *Prais-seagh*, *Brak'ar*. Welsh: *Gwydd-droed rhuddawg*. E.) *Dunghills*, rubbish, and cultivated ground. A. Aug.—Oct.

(**C. BOTRYODES.** Leaves triangular, somewhat toothed; the upper ones bluntish: spikes erect, compound, rounded, fleshy.

E. Bot. 2247.

Stems spreading, or prostrate. *Leaves* very much smaller than the two last, fleshy, triangular, or hastate, not rhomboid, and very slightly toothed, smooth, frequently red, as are also the copious, compound, rounded, more or less leafy *spikes*. *Cal.* tumid, obtuse. *Seed* small, black, and shining.

MANY-SPIKED GOOSEFOOT. In moist shady places, near the sea. Near Yarmouth. Mr. Lilly Wigg. Between the cliff and the sea at Lowestoft. A. Aug.—Sept. Sm. E.)

C. ALBUM. Leaves lozenge-triangular, truncated, entire at the base; the uppermost oblong: bunches upright.

Curt.—*Blackw.* 553—(*E. Bot.* 1723. E.)—*Fuchs.* 139—*J. B.* ii. 972. 1—*Dod.* 615. 2—*Ger. Em.* 326. 6—*Ger.* 257. 4—*Pet.* 8. 2.

Plant whitish (mealy) when full grown. *Bunches* always branched, tuft-like, straight, composed of clustered spikes. *Spikes* small, egg-shaped, sessile, alternate, crowded; composed of flowers set close together. *Flower-leaves* strap-shaped, very entire, sessile, small, two or three to each spike. *Linn.* (*Seeds* very smooth, not dotted. E.) *Stem* shining, bluntly angular, streaked with green, purple, and white. *Branches*, two together, especially at the lower part of the stem. *Leaves* with three semi-transparent veins springing from the base, sprinkled, especially on the under side, with white shining particles; the upper spear-shaped.

(Var. 2. Angles of the stem purple. Seeds dotted. E.)

(*Fl. Dan.* 1150. E.)—*Vaill.* 7. 1.)

Var. 3. Leaves generally very entire, sometimes toothed. Ray, p. 155. n. 12.

(Several of these species are supposed to be injurious to swine. E.)

J. B. ii. 973. 2.

Var. 4. Leaves thick, blunt. Ray, *p.* 156. *n.* 13. A. Aug.—Sept.

WHITE GOOSEFOOT. (Welsh: *Gwydd-droed gwynaidl*. E.) Corn-fields, old dunghills, rubbish, and gardens, common. A. Aug.*

Stem upright, green; with purplish angles. *Leaves* of the branches spear-shaped, very entire, with only one or two teeth. *Bunches* thread-shaped, divided, long, bare. *Calyx* of the fruit with five acute angles. Linn. Angles of the joints constantly bright red. *Seeds* reticulated with impressed dots. Curt.

GREEN GOOSEFOOT. (*C. viride*. Linn. With. Ed. 4. *C. album* var. γ . Fl. Brit. E.) Kitchen gardens, common. A. Aug.

(*C. FICIFOLIUM*. Leaves sinuated, jagged, somewhat hastate, entire towards the base; upper ones oblong, quite entire: seed dotted.

Curt.—*E. Bot.* 1724—*Pet. H. Brit. t.* 8. *f.* 3.

Of a greener hue than the preceding, with a purple stain at the base of the foot-stalks. Lower leaves hastate, narrower than in *C. album*, from which it is well distinguished, according to the observation of Curtis, by its dotted, or reticulated, seeds.

FIG-LEAVED GOOSEFOOT. FIG BLITE. *C. viride*. Curt. not of Linn. In waste ground, and on dunghills. In several places about London. Curtis. Near Yarmouth. Mr. D. Turner. A. Aug.—Sept. Sm. E.)

C. HYBRIDUM. Leaves heart-shaped, with angles tapering to a point; bunches branching, leafless.

Curt. 248—*Vaill.* 7. 2—(*E. Bot.* 1919. E.)—*Barn.* 740—*Pet.* 8. 7.

(*Seeds* marked with large dots. Fl. Brit. *Stem* slender; smell rather fetid. E.) *Leaves* rather truncated at the base; with two or three large teeth on each side. *Bunch* at first compact, but forming a panicle when fully expanded, lighter and more widely scattered than in any of the preceding species.

MAPLE-LEAVED GOOSEFOOT. Rubbish, kitchen-gardens, and corn-fields. Near Northfleet. (In Battersea-fields. Curtis. About Colchester. Dale. St. Anthony's Ballast Hill, Northumberland. Mr. Winch. About Edinburgh. Greville. E.) A. Aug.

C. GLAU'CUM. (Leaves all egg-oblong, waved at the edge; glaucous and mealy beneath; spikes compound, leafless, lobed: seed minutely dotted. E.): bunches naked, simple, clustered.

(*E. Bot.* 1454—*Fl. Dan.* 1151. E.)—*J. B.* ii. 973. 1—*Pet.* 8. 1.

(*Stems* spreading thick, furrowed, branched, varying greatly in height, from a few inches to as many feet. *Leaves* sometimes purplish above.

OAK-LEAVED GOOSEFOOT. On rubbish, (or waste sandy ground, about London, &c. A. Aug.

* Cows, goats, and sheep eat it. Horses refuse it. Swine are extremely fond of it. Linn. A black *Aphis* feeds upon it, and sometimes destroys it. St. (The young herb is reported to be eatable when boiled, and is known by the name of *Fat Hen*, in some parts of Norfolk. Sm. It is also used as a potherb in Scotland. E.)

C. MURALE. Leaves egg-shaped, shining, toothed, acute: spikes aggregate, paniced, cymose, leafless.

(*E. Bot.* 1722. *E.*)—*Pet.* 8. 5—*Ger.* 256. 2—*J. B.* ii. 976. 1.

(*Stem* very much branched, often tinged with purple. *Leaves* triangular-egg-shaped, lengthened at the base, rather thick. *Seeds* very minutely dotted. Plant smelling disagreeably.

NETTLE-LEAVED GOOSEFOOT. (*THICK SHINING BLITE.* *E.*) Dunghills, and rubbish, under walls, and waste places. A. July—Aug.

(2) *Leaves entire.*

C. O'LIDUM. Leaves very entire, lozenge-egg-shaped: flowers congested, axillary.

Curt.—(*Fl. Dan.* 1152—*E. Bot.* 1034. *E.*)—*Woodv.* 145—*Ger.* 258—*Dod.* 616. 2—*Lob. Obs.* 128. 4—*Ger. Em.* 327—*Park.* 749. 9—*Pet.* 7. 11—*Blackw.* 100—*J. B.* ii. 975. 1—*H. Ox.* v. 31. 6.

Trailing on the ground, and smelling like stale salt fish. (*Leaves* whitish, powdery. *Flowers* small, in oblong interrupted spikes. *E.*)

PETID GOOSEFOOT. *C. vulvaria.* Linn. Road sides, old walls, and on rubbish, also frequent among sand near the sea. At the foot of the walls, Yarmouth; and at Cambridge. Mr. Woodward. Opposite Shoreditch Workhouse. Mr. Whately. (Friar's Goose, and by road sides near Westoe, Durham. Mr. Winch. Fisher-row, Links, and race course, Musselburgh. Maughan. Grev. Edin. *E.*) A. Aug.*

C. POLYSPERMUM. Leaves very entire, egg-shaped: stem upright, or nearly so: calyx of the fruit open. *Curt.*

Curt.—(*Fl. Dan.* 1153—*Fuchs.* 174—*E. Bot.* 1480. *E.*)—*H. Ox.* v. 30. row 3. 6—*Dod.* 617. 2—*J. B.* ii. 967. 2—*H. Ox. Ib.* 3—*Ger.* 257. 3—*Pet.* 7. 10—*Lob. Obs.* 129. 1—*Ger. Em.* 325. 3—*Park.* 754. 3.

(*Leaves* petiolate, more or less acute, branches long. *Stems* quadrangular, often reddish. *Seeds* (or rather seed-vessels) brown, shining, very apparent, and very numerous. Hook. *Stamens* very evanescent; it is rare to meet with five; sometimes there are only three, often but one or two, frequently none.

Smith describes this plant with stems prostrate; we have again examined several specimens, and still think they agree with the figure and character of Curtis. In the English Botany, vol 21. p. 1481. we find our plant cited as *C. acutifolium* of that work. Lightfoot, however, admits that *A. polyspermum* grows both erect and reclining; and Purton observes, that in remarkably luxuriant specimens, with branches spreading full a yard from the stem, some leaves are often found pointed, others more or less blunt or rounded; in the young shoots the flowers are spike-like; in the older, the tufts are remarkably large and spreading; stems perfectly decumbent, perhaps owing to age or luxuriance: so that the latter writer is much inclined to think that *A. polyspermum* and *acutifolium* do not specifically differ: an opinion confirmed by Professor Hooker, who states that "the characters of this and *acutifolium* vary into each other, even on the same individual." *E.*)

ALL-SEED GOOSEFOOT OR BLITE. Cultivated ground and dunghills. Generally in turnip fields. Mr. Woodward. A. July—Aug.

* Scent rank, and fetid. It has the reputation of being an anti-hysteric. Cows, horses, goats, and sheep eat it. Swine refuse it. *Phalena-carsoleta* is found upon it.

C. MARITIMUM. Leaves awl-shaped, semi-cylindrical : (flowers axillary, sessile. E.)

Dicks. H. S.—(*E. Bot.* 633. E.)—*Fl. Dan.* 489—*Dod.* 81. 2—*Ger. Em.* 535. 3—*Park.* 279. 2—*Lob. Adv.* 170. 1—*Pet.* 9. 1.

(*Stem* upright, very much branched, a foot high or more. *Leaves* fleshy, an inch long. E.) *Branches* alternate. *Flowers* solitary, axillary. *Style* single. *Summits* three, pink-coloured. *Seeds* glossy, (black, minutely striated. *Bloss.* varying from pale to deep red : plant sometimes dwarfish, and prostrate. E.)

SMALL WHITE GLASSWORT. SEA GOOSEFOOT. (Welsh : *Gwydd-droed arfor.* E.) Sea shore. Salt marshes. Mr. Woodward. A. Aug.*

ATRIPLEX. *Bloss.* none. *Flowers*, some united, and others fertile on the same plant.

United Fl. *Cal.* five-leaved : *Seed* one, depressed, upright.

Fertile Fl. *Cal.* two-leaved : *Seed* one, compressed : (*Style* cloven. E.)

A. PORTULACOIDES. Stem shrub-like : leaves inversely egg-shaped.

E. Bot. 261—*Dod.* 771. 1—*Ger. Em.* 523. 2—*Matth.* 160—*J. B. i. b.* 228—*Kniph.* 2—*Clus. i.* 54—*Lob. Obs.* 213. 1 ; *Ic. i.* 392. 1—*Ger. Em.* 523. 3—*Park.* 724. 1—*Pet.* 7. 7.

(A small shrubby plant, about one foot and a half high. *Stems* leafy, branched, quadrangular, hoary, as is the whole plant. E.) *Stems* and *branches* usually declining. *Leaves* sea-green, the young ones spear-shaped, and strap-spear-shaped. *Bunches* branched, terminal, and from the bosom of the upper leaves, with a few small leaves interspersed. Woodw. (*Flowers* yellowish, small, in clusters, forming altogether a spiked panicle. E.)

SHRUBBY ORACHE. SEA PURSLANE. (Welsh : *Eurlllys ; Llygwyn llyswyddaid.* E.) Sea shores on a clayey soil. S. July—Aug.†

A. LACINIATA. Stem herbaceous, spreading : leaves trowel-shaped, angular and toothed ; very mealy underneath. E. Bot.

Dicks. H. S.—*E. Bot.* 165—*Matth.* 463—*Park.* 748. 4—*Ger.* 257. 4—*Dod.* 615. 4—*Lob. Obs.* 128. 3. *Ic. i.* 255. 1—*Ger. Em.* 325. 4—*J. B. ii.* 974. 1—*H. Ox. v.* 32. 17—*Pet.* 7. 3.

Stem much branched, generally prostrate, smooth, yellowish or reddish. *Leaves*, the lower trowel-shaped, the upper trowel-spear-shaped ; below very entire at the edge, above variously jagged, sprinkled with a shining mealliness ; mostly alternate, some few even of the upper ones opposite. *Leaf-stalks* very short. *Valves of the seeds* very large, trowel-shaped, covered with the same mealliness as the leaves. Woodw. (*Flowers*, axillary, two or three together. E.)

* An excellent potherb. The seeds are acceptable to small birds. (The slovenly custom of tolerating all kinds of weeds on manure heaps, often occasions the plants to be propagated in fields and gardens, where their extirpation proves very troublesome. *Phalena lubricipeda* feeds upon most of the species. They yield an alkaline salt in abundance, which is occasionally used in the manufacture of glass. E.)

† (The whole plant abounds with fossil alkali or soda. *Str.* This species has been thought worthy of admission into the garden or shrubbery, though not possessed of much beauty. E.)

FROSTED SEA ORACHE. (Welsh: *Llygwyn ariannaid*. E.) Sea shores. Pakefield, Suffolk. Mr. Stone. Ramside opposite the Isle of Walney, and Rosebeck Low Furness, Lancashire. Mr. Woodward. (At Newhaven, near Edinburgh. Near Harwich. Sir J. E. Smith. Near Marsden Rocks, Northumberland. Mr. Winch. Shore near Maryport, Cumberland. Rev. J. Harriman. On the south-east side of Holyhead Harbour. Welsh Bot. Beach at Caroline Park. Mr. Neill. Grev. Edin. E.)
A. July—Aug.

A. PAT'ULA. (Stem herbaceous, spreading: leaves trowel-spear-shaped: valves of the seeds tuberculate on the sides. E.)

Curt.—(*E. Bot.* 936. E.)—*H. Ox.* v. 32. 14—*Pet.* 7. 1.

(Flowers in small clusters, on long, leafy racemes, both terminal and axillary. E.) Stems angular and somewhat furrowed (often reddish. E.) Leaves triangular and halberd-shaped, the appendages longer or shorter, toothed or entire, the upper usually spear-shaped and entire. Valves of the seeds larger than those of *A. angustifolia*, flatter, and toothed only at the edges. Branches often horizontal, and even bending down. Woodw. (Leaves on long leaf-stalks, rather powdered underneath. Seed large, somewhat convoluted, slightly dotted. Fl. Brit.

Var. 2. Stems trailing. Leaves hardly indented. Ray. All the leaves oval-spear-shaped, very entire. Woodw. (Fleshy, tinged with red. E.)

J. B. ii. 974. 2—*Chabr.* 306. 4—*Pet.* 7. 2.

DELT ORACHE. SPREADING HALBERD-LEAVED ORACHE. Irish: *Eirelochog*. Welsh: *Llygwyn tryfal*. *A. hastata*. Huds. Lightf. *Curt. Relh.* With. Ed. 4. A very different plant from *A. hastata* of Linn. Fl. Brit. which is not a native of Britain. E.) On rubbish, dunghills, and in kitchen gardens.
A. Aug.—Sept.*

(DELT SEA ORACHE. By the sea side the whole plant is procumbent, more fleshy, and all the leaves sometimes entire. E.) Banks of the sea marshes near Malden, Essex. About London, and on the sea side in Selsey, in Sheppy Island. Ray. Yarmouth. Mr. Woodward.

(**A. ANGUSTIFOLIA.** Stem herbaceous, spreading; leaves spear-shaped, very entire; the lower leaves somewhat halberd-shaped: calyx of the fruit halberd-shaped, smoothish.

E. Bot. 1774. E.)—*Lob. Obs.* 129. 4; *Ic.* i. 257. 2—*Ger. Em.* 326. 7—*Park.* 748. 7—*H. Ox.* v. 32. 15—*Pet.* 7. 5—*J. B.* ii. 973. 3. 4.

(Resembles *A. patula*, but is more spreading. Leaves on shorter leaf-stalks, almost all spear-shaped, very entire, horizontal; the lower ones broader, but not toothed. Valves of the seeds deltoid-halberd-shaped, sharp-pointed; border very entire; disk scarcely ever toothed. Seed only half the size of the former, not dotted. Fl. Brit. Suspected to be only a variety of the preceding. E.)

SPREADING NARROW-LEAVED ORACHE. SPEAR ORACHE. (Welsh: *Llyg-*

* It is sometimes gathered as a potherb, and eaten in lieu of spinach and other greens. Cows, goats, sheep, and swine eat it, but do not seem to be fond of it.

wyn culddail ymledawl. A. angustifolia. Sm. Willd. E.) A. patula. Lightf.
 •Huds. With. Ed. 4. On rubbish and ditch banks. A. Aug.

A. **ERECTA**. Stem upright, herbaceous: leaves egg-spear-shaped; the lower ones indented: the calyxes of the seeds covered with sharp points.

E. Bot. 2223.

Stem branched, strong, and stiff. Leaves on leaf-stalks, slightly powdery, sharp-pointed; the upper ones nearly entire. Bunches terminal, compound, many-flowered, almost leafless. The fruit only one third as large as that of the former species, trowel-shaped, sharp-pointed, gibbous, the surface beset with prominent tubercles. Seed like that of the former, but smaller. A very distinct species, easily known by its small fruit and numerous prickles. Fl. Brit.

UPRIGHT SPEAR-LEAVED ORACHE. *A. erecta. Huds. Sm. Willd. A. patula. var. 2. Huds. Ed. 2. With. Ed. 4. E.)* At the entrance into Battersea field from Nine Elms. Ray. A. Aug.

(A. **LITTORALIS**. Stem herbaceous, upright: leaves all strap-shaped, entire, or toothed: calyx of the seed nauricated, sinuated.

(E. Bot. 708. E.)—Pet. 7: 6.

(Stem one to two feet high, angular and striate, branched. Leaves petiolate, chiefly glauco-pulverulent beneath. Flowers clustered in small, dense, lateral, and terminal spikes. Grev. Several varieties have been recorded, with leaves more or less toothed, elongated or obtuse, as *A. serrata* of Hudson, &c. Smith observes, that what gives a spiral appearance to the seed of this and other species of *Atriplex*, is the convoluted form of the embryo, surrounding the cotyledons, which are themselves flat and straight. E.)

(GRASS-LEAVED SEA ORACHE. JAGGED LONG ORACHE. Welsh: *Llygwyn arfor. E.) A. marina. Lightf. Atriplex valvis seminum integris foliis omnibus ex lineari-lanceolatis, integris et ex sinuato-dentatis. Gmel. Sib. iii. p. 72.* Sea shores and on rubbish. By the river and on the banks of the marshes about Malden, Essex. Ray. Wells, Norfolk. Mr. Crowe, and Yarnouth and Blakeney, Norfolk. Mr. Woodward. At Wisbeach. Rev. R. Relhan. (On the border of Dulas Bay, between Sandhall and Pentre arianell, Anglesey. Welsh Bot. East of Caroline Park; Guillon Loch. Mr. G. Don. Grev. Edin. E.) A. Aug.

A. **PEDUNCULATA**. Stem herbaceous, flexuose: leaves divaricating, obovate, entire: fertile flowers on fruit-stalks, wedge-shaped.

E. Bot. 232—Pluk. 36. 1—Pet. 7. 8—Fl. Dan. 304.

Bunches terminal, axillary. Fruit-stalks lateral, simple, in pairs, or incorporated. Calyx resembling the fruit of *Thlaspi bursa-pastoris* with three lobes, the middlemost the smallest. Linn. Stem much branched; branches wide apart. Leaves some inversely egg-shaped, others obtusely spear-shaped, sea-green.

Var. 2. Smaller; leaves small, and stems more diffuse. Near Lynn, Norfolk. Ray.

PEDUNCULATED SEA ORACHE. Sea shores. Near Skirbeck, one mile from Boston; and in the Isle of Thanet, near the Ferry. Ray. Near Yar-

mouth, in the salt marshes out of the north gates. Mr. Woodward. At Lynn. Plukenet. (Shore of Braydon, Suffolk. Mr. Wigg. E.)
A. July—Sept.*

HUMULUS.† Barren and fertile flowers on different plants :

Bloss. none.

B. *Calyx* five-leaved : *Anth.* with two pores at the apex.

F. *Calyx* one-leaved, oblique, entire : *Seed* one, coated by a leaf-like calyx.

H. LU'PULUS.

(*E. Bot.* 427. E.)—*Mill. Ill.*—*Kniph.* 9—*Gars.* 355—*Blackw.* 536. A. B.—*Clus.* i. 126. 2—*Dod.* 409. 1—*Lob. Obs.* 347. 2; *Ic.* i. 629. 1—*Ger. Em.* 885—*Park.* 177—*Ger.* 737. 1—*Cam. Epit.* 933. *fert. and bar.* 934—*Fuchs.* 164—*J. B.* ii. 151—*Trag.* 812—*Matth.* 1213—*Ger.** 737—*J. B.* ii. 152—*Lon.* i. 208. 3.

Stems climbing and winding to the right, (extending many feet, dying down to the root at the commencement of frost, angular. *Leaves* lobed, serrated, (opposite, rough. *Flowers* greenish yellow, the *fertile ones* ovate, pendulous, cone-like catkins, at length scariose. E.)

COMMON HOP. (Welsh : *Llewig y blaidd* ; *Pensoeg.* E.) In hedges, (particularly of the middle and southern counties of England. In Anglesey. Welsh Bot. On the Hamilton road, near Tolcross, Glasgow. Mr. Hopkirk. Hedges near Duddingston. *Grev. Edin.* E.) P. June.‡

* The July Arrach Moth, *Phalena Atriplicis*, *P. lubricipeda*, *P. cassoleta*, *P. Oxycanthæ*, and *Aphis Atriplicis*, are found upon the different species.

† (From *humilis*, of humble growth ; a trailing plant. E.)

‡ (The principal use of Hops is in the brewery for the preservation of malt liquors ; which, by the super-addition of this balsamic, aperient, and diuretic bitter, become less viscid, less apt to turn sour, more detergent, and in general more salubrious. E.) The English, according to the most credible accounts, learned the use of Hops from some native of Artois, who, in the beginning of the sixteenth century, introduced them into this country, (or as some believe about the year 1524. They are first mentioned in the English Statute-Book in the year 1562, viz. 5th and 6th Edward VI. cap. 5. And by an act of parliament of the first year of King James I. anno 1603, cap. 18, it appears that Hops were then produced in abundance in England. E.) ; but for a long time the addition of them to beer was held to be an adulteration of that liquor : (and so deleterious were they considered, that the use of them was interdicted by law in Scotland. The failure of the crop is so frequent, and the expenses on their culture so great, that it may almost be doubted whether on the average, they are profitable to the husbandman.

“ Till St. James (a) be come and gone,
There may be Hops, or there may be none,”

is proverbial.

Mr. White remarks that this precarious produce may be partly attributable to the fertile plants being usually deprived of the natural proximity of the other kind. A due portion of each should be left in every Hop garden, in which case the plants become more vigorous, (as proved in analogous instances.) The tops should also be pinched off when the binds are very strong, which incases the side shoots. It has been, therefore, recommended to plant Hops on espaliers, the horizontal growth having been found more productive than the upright. But, as Mr. Aikin describes, the Hop plants are usually set in small hills at regular distances from each other, about five plants, and three long poles for them to run upon, being placed in each hill. Towards July they have reached the top of poles fifteen to twenty feet high, when the Hop gardens make a most beautiful appearance, the

BETA.* *Cal.* five-cleft; closed on the ripened seed: *Bloss.* none: *Seed* kidney-shaped, horizontal, immersed in the fleshy calyx.

B. MARITIMA. (Stems procumbent at the base: flowers mostly in pairs: segments of the calyx very entire. E.)

Differs from *B. vulgaris* in flowering the first year; in the leaves growing oblique or vertical; in the leaves of the calyx being equal, and not

poles being entirely covered with verdure, and the flowers depending from them in clusters and light festoons.

"Lo, on auxiliary poles, the Hops
Ascending spiral, ranged in meet array."

As soon as the seed is formed, the Hops, (the seed vessels of the fertile plants), are picked off by women and children, (for this process the poles being taken down. The Hops are then dried over a charcoal fire, and exposed a few days to the air, after which they are packed in sacks and sent to market. By an accurate return in 1826, it appears that the number of acres in cultivation for Hops amounted in Worcestershire to 3045; in Herefordshire 12,352; throughout England 50,471 acres. Years ago, when the rent of land and labour was far lower than at the present period, the expenses per acre for Hops were estimated at about 15*l.*, and a fair produce worth nearly double that sum; so that the clear profit might then be deemed nearly cent per cent. But latterly, according to Mr. Arthur Young, the expenses are at least doubled, while the average crop remains nearly the same both in quantity and value. E.) If the hop-yards were covered with stones, the plants would be less liable to suffer from the honey dew or from the Otter-Moth: for the honey dew is the excrement of a species of *Aphis*, but these insects seldom increase so as to endanger the plant, unless it be in a weak condition; and the larvæ of the Otter-Moth at the roots, first occasion the plant to be sickly. When the Hop grows wild in stony places and fissures of rocks, where the moth cannot penetrate to deposit its eggs, the plant is never known to suffer from the honey dew. (The common green *Aphis* lives through the winter on herbaceous plants, and as spring advances both sexes of these insects acquire wings, and are then called the Fly, which may be seen from this period sitting on the Hop plants, or floating in the air all around. For various interesting particulars respecting the habits of *Aphides*, vid. Curtis in Linn. Tr. v. vi. E.) The young shoots are eaten early in the spring as asparagus, and are sold under the name of Hop tops. Horses, cows, sheep, goats and swine eat it. The *Papilio Io. C. album*, the Otter, *Phalena Humuli* and *rostralis* live upon it. It will dye wool yellow, (but the principal use is as a mordant. E.) What is that electrical murmur, like very distant thunder, when the hop poles are shaken by the wind? Linnæus inquires. (We venture to suggest, probably nothing more than the sound occasioned by the agitation and collision of innumerable, and often exsiccated branches, leaves, and flowers. E.) Soil and cultivation occasion some varieties, as the *Garlic*, *Long White*, and *Oval Hop*; but for the common purposes of brewing they are distinguished as *Kentish* or *Worcestershire Hops*, (the former kind (those from Farnham preferred) is more intensely bitter than the latter. The culture of the Hop is likely to be extended into the counties of Somerset and Devon. E.) A decoction of the roots, or from 20 to 30 grains of the extract, is said to be sudorific, and to answer the purposes of Sarsaparilla. (A pillow filled with Hops is reported to produce comfortable repose in cases where opiates have been unsuccessful. The bind or straw of hops contains an excellent bemp for making cloth, (as long ago practised in Sweden), canvass, ropes, and the very best materials for making all kinds of paper. Instead of being thrown away or burnt after the hops have been picked, it should be steeped for five or six days in water, dried in a stove, and beat in the same way as flax and hemp. Hall, in Month. Mag. 26. Such a manufacture is in some degree established, and very properly encouraged by the Society of Arts and Commerce. A tincture prepared from Hops and sold in the shops, is sometimes prescribed with good effect as an anodyne. E.)

* (This generic name is derived from the form of the seed-vessel, which, when swollen with seed, resembles the second Greek letter β . (beta.) E.)

toothed. Linn. *Stems* prostrate. *Flowers* either solitary or in pairs. *Summits* sometimes three. E. Bot. *Root* large, thick, fleshy. *Stems* from one to two feet long, angular, furrowed, often tinged with red. *Leaves* deep green, flaccid, ovate, wavy at the edge; stem-leaves larger, three or four inches long.

SEA BEET. (Welsh: *Melged arfor*. E.) Sea coast, and about Nottingham. (Near the South Steel Battery, Scarborough. Mr. Travis. Sea shore near Sunderland. Mr. Weighell. On the cliffs near Craithole, Devon. Rev. P. Jones. Near Cramond. Dr. Willis. Grev. Edin. On the Bass Island, Firth of Forth. E.) Near Lynn, Yarmouth, and Wells. Mr. Woodward. Isle of Wight. Stokes. Dorsetshire coast.

P. July—Sept.*

SAL'SOLA.† *Calyx* five-cleft: *Bloss.* none: *Seed* one, (with a spiral embryo. E.) beneath; coated by the calyx.

S. KA'LI. Herbaceous, prostrate: leaves awl-shaped, spinous, rough: calyx bordered, axillary.

(Hook. Fl. Lond. 158—E. Bot. 634. E.)—Fl. Dan. 818, left-hand fig.—Woodv. 143—Dod. 81. 1—H. Ox. v. 33. 11.

(*Stems* stiff and rigid, very much branched, leafy, pubescent. *Leaves* alternate, lying very wide, channelled. *Flowers* at the bosom of the leaves, solitary, sessile. *Seeds* top-shaped, with lobes convoluted. Fl. Brit. *Flowers* greenish, with three floral leaves to each. E.)

PRICKLY GLASSWORT, SALTWORT, or KELPWORT. (Welsh: *Hel-llys yspi-gawg*. E.) Sandy sea shores, frequent. A. July—Aug.‡

S. FRUTICOSA. Shrub-like, upright: leaves semi-cylindrical, rather blunt; (without spines.

E. Bot. 635. E.)—Lob. Adv. 163. 3—J. B. iii. 704. 4.

(*Stem* a yard high, woody, cylindrical, much branched; branches upright, leafy. *Leaves* alternate, fleshy, smooth, rather glaucous. *Flowers* axillary, solitary, sessile, green. An elegant evergreen shrub, sufficiently ornamental for the garden. Fl. Brit. E.)

(SHRUBBY SALTWORT or GLASSWORT. E.) • Sea shore; not common. Near Southwold, Suffolk. Mr. Woodward. (At Wells and Cley, Norfolk. Holmes Island, Severn. Lobel. Mr. Crowe. Thornham, Norfolk. Rev. Mr. Sutton. At Weymouth. A. B. Lambert, Esq. Fl. Brit. On Willington Ballast Hills, Northumberland. Winch Guide. E.)

S. Aug.

UL'MUS. *Cal.* five-cleft: *Bloss.* none: *Caps.* superior, one-celled, membranous, compressed: *Seed* solitary.

* (Were this plant cultivated, it would probably answer the purposes of an esculent vegetable as well as the other species. E.)

† (From *sal*, salt; alluding to the saline nature of the plant. E.)

‡ (This plant (together with a few others of a similar nature, yields a valuable sort of soda, imported from the south of Europe; and which constitutes a material ingredient in the manufacture of soap and plate-glass. To obtain the fossil alkali, the plants are well dried and placed on a deep trench on the shore upon cross bars, beneath which a fire is lighted, when they are violently agitated, and on cooling, settle into solid masses. E.)

U. CAMPESTRIS. (Leaves doubly serrated, unequal at the base: flowers nearly sessile, four-cleft, with four stamens, crowded together: fruit oblong. E.)

(*E. Bot.* 1886. E.)—*Woodv.* 197—*Fl. Dan.* 632—*Hunt. Evel.* i. p. 114. *Ed.* 2—*Park.* 1404. 1. 6—*Matth.* 144—*Lob. Obs.* 607. 1—*Ger. Em.* 1480. 1—*Park.* 1404. 1—*Ger.* 1297. 1—*Trag.* 1087.

(A large tree with rugged bark. Leaves rhomboid-ovate, alternate, shortly petiolate; about two inches long, and one broad in the middle, rough on the upper surface, paler and smoother underneath. Flowers almost sessile, appearing much earlier than the foliage, from inferior buds, in numerous small, dense, dull purple clusters; each flower having a small ciliated bractea at its base. Anthers purple. A weeping var. (as of the ash,) is cultivated in the nurseries. E.)

SOUTHERN ELM. (Irish: *Ailim*. Welsh: *Llwyf guffredin*. Gaelic: *Aa-leamhan*. E.) Hedges. Plentiful in Worcestershire and Middlesex. Chiefly in hedge rows. (In the south of England far more prevalent than the oak. E.) T. March—April.*

* A decoction of the inner bark drank freely has been known to relieve dropsies.—It cures the *Lepra ichthyosis* of Sauvages. Lettsom's Med. Mem. § 3. (The leaves may be given in powder, and have a bitterish astringent taste. E.) The bark dried and ground to powder has been mixed with wheat in Norway to make bread in times of scarcity. The flowers have a violet smell, (and are said to occasion a very sickly state in bees which frequent them, as described in Virgil.) The wood, being hard and tough, is used to make axle-trees, mill-wheels, keels of boats, chairs, coffins, (rails, gates, under-ground pipes, mill-work, and is essential to patten-makers. E.) The tree is beautiful, and well adapted to make shady walks as it does not destroy the grass, and its leaves are acceptable to cows, horses, goats, sheep, and swine; for this purpose it should be grafted upon *U. glabra*, and then the roots will not send out suckers, which the common Elm is very apt to do, and give a great deal of trouble to keep the ground clear of them. (In marshy ground, or clayey soil retentive of moisture, Elm-trees frequently become hollow, or porous, and consequently of little value as timber; but the trees of slow growth, in a stiff, strong soil, are heavy and dense, and proportionably esteemed. E.) It bears to be transplanted. (*Xyloma Ulmi*, clustered, brown, changing to black, grows in irregular patches, with conspicuous filmy scales, on both sides the leaf. Pers. The leaf of the Elm in autumn may commonly be observed marked with dark-coloured blotches, which are the "plague-spots" of its destruction. When spring arrives, these spots become matured, the surface cracks, and the capsules discharge their seeds. Lamarck names this intruder *Sphæria Xylomoides*; whether distinct from other parasites here noticed, we are not confident. Vide Journ. Nat. Pl. v. f. 1. And here we take leave to insert a brief explication of an appearance, (though not peculiar to the kind of tree above described, which has frequently perplexed even well-informed naturalists, but which has been by a judicious application of physiological facts satisfactorily solved by Dr. Mason Good. "Foreign substances," remarks that author "have often been found deeply imbedded in trees; having at one time been sunk into the inner bark, or penetrated it by a wound or excavation, and afterwards become covered over with new annual growths of *liber* and *alburnum*." Hence the cause of the very wonderful phenomena of toads or frogs being found in a like situation; having in the same way been impacted in the hole or crack into which they had crept, by the glutinous fluid of the inner bark, during sickness or a protracted winter sleep. Some of these have been found alive when the trees have been cut down, having derived both air and nutriment enough from the surrounding vessels of the tree during their imprisonment." Also *Dothidea* (*Sphæria*) *Ulmi*. Grev. Scot. Crypt. 200. "Epiphyllous, roundish, confluent, convex, greyish-black, black within, the cellules white, orifices granulariform," may be detected on the dead leaves of Elm. The viscid juice often included in blisters on Elm leaves, the work of insects, was once a favourite cosmetic, and called Elm-water. It is still used for recent bruises. Various insects are intimately connected with the Elm; as *Anthrax scabrosus*, *Scolytus destructor*

Var. 2. Small. Differs from the preceding only in the smallness of all its parts. Ray. (*Leaves* doubly and sharply serrated, pointed, rough,

(beneath the bark; according to Mr. Macleay, in Ed. Phil. Journ. 1824, at this time devastating the numerous fine Elms in St. James's and Hyde Parks; where, in consequence, the new leaves appear but to wither, and the tree perishes,) assails in its decortication; *Vanessa polychloros*, *Orchestes ferrugineus*, *Livia* (*Aphis*) *Ulm*i, (best extirpated by the voracious Plant-louse Lion,) *L. (Coccus) Ulmi*, *Tortrix cerusana*, and *Lucanus inermis* are nourished by it. The partially yellow and dead appearance of the leaves is often occasioned by the leaping *Curculio*, an insect which of the leaf forms a kind of bag or small bladder, separating the two laminae or outward pellicules, whilst the parenchyma that lies between them has been consumed by small larvæ that have made themselves that dwelling. After their transformation they come forth and give being to a *Curculio* that is brown, small, and difficult to catch, by reason of the nimbleness with which it leaps.—*Papilio polychloros*, and *C. album*; *Phakania lubricipeda*, *Pavonia*, *betularia*, and *vellica*; *Cimex Ulmi* and *striatus*; *Cicada Ulmi*. The latter generally curl the leaves, so as to make them a secure shelter against the weather. Linn. Silk worms will devour the tender leaves with avidity. Tr. Soc. Arts. ii. 157. The wood of the Elm tree is pre-eminent for tenacity; hence the keels of ships are now almost universally laid with Elm; and sometimes the gun-wales, especially of ships of war, are made of it, it being less liable to splinter in action than even oak; keels likewise made of this wood are less apt to split in taking the ground. "Treatise on Planting." The Elm rivals the Oak in size, but from want of due attention to place of growth is too often of very inferior quality. In the reign of William III. much Elm timber was imported from Holland, but probably defective in texture, and *U. Hollandica* then became fashionable, though a very inferior sort. Cows will devour the leaves even in an abundant pasture, and in Worcestershire they are boiled, and thus afford a nutritive food for hogs. Evelyn and others imagined the Elm not to have been originally indigenous to Britain, but rather introduced by the Romans, as usually connected with vineyards, (*Virg. passim*), and therefore less prevalent in the northern than in the southern portion of our island; and in corroboration of this idea, it has been remarked that no extensive woods of Elm are to be found, which indeed would be contrary to the general habit of the plant. Dr. Hunter entertains a different, and more probable, opinion; the nature of the climate being sufficient to account for the scarcity or frequency of the tree. Mr. Winch observes that the common Elm of the southern counties of England, (*U. campestris*), is certainly not indigenous north of the Tees: even in sheltered plantations on the east side of the Island, it seldom attains a large size. The Wych Elm, (*U. montana*), and the Smooth-leaved Elm, (*U. glabra*), are much more hardy and abundant. Next to the Oak in dignity and rank amongst forest trees, we may be allowed to refer to some curious particulars of a vast hollow Elm, which formerly attracted general attention at Hampstead, (having a staircase within, seats at the top, &c.) in Park's Topography, with a plate after Hollar.

"Hic est ante omnes alias mirabilis arbor."

Also to Ray, who records a Blythfield, (Staffordshire), Elm, which furnished 8660 feet of planks; the whole mass weighing 97 tons: and among others, equally gigantic and well delineated in Strutt's "*Sylva Britannica*," (a work combining unusual accuracy with picturesque effect), may be named, the Elm at Chequers, Bucks, one of the most ancient, planted in the reign of King Stephen; the shell of the trunk is now in circumference 31 feet: the Chipstead Elm, Kent, contains 268 feet of timber, measures 15 feet in girth; said to have had an annual fair held beneath its shade, temp. Hen. V.: the Elm at Crawley, in Sussex, 70 feet high, 35 feet of girth, whose cavity might afford fit retirement for the secluded anchorite, were not the venerable remains, endeared to successive generations as the scene of childhood's frolic, and village fetes, still frequented by the more honest rustics. Gilpin remarks, "the Elm naturally grows upright; and when it meets with a soil it loves, rises higher than the generality of trees; and after it has assumed the dignity, and hoary roughness of age, few of its forest-brethren excel it in grandeur and beauty. The Elm is the first tree that salutes the early spring with its light and cheerful green,—a tint which contrasts agreeably with the Oak, whose early leaf has generally more of the olive cast.

unequal at the base. *Flowers* on short stalks, four or five-cleft, with four or five stamens; fruit roundish, naked, cloven; branches spreading; their bark corky. E. Bot.

(E. Bot. 2161. E.)—Dod. 837—Ger. Em. 1480. 2—Park. 1404. 4.

Between Christ Church and Lymington. Ray. In Lord Dudley's woods, at Himley, Staffordshire. (Frequent in Sussex.

NARROW-LEAVED ELM. CORK-BARKED ELM. *U. suberosa* of Ehrh. Willd. and E. Bot. *U. campestris* β. Fl. Brit. E.)

Var. 3. Leaves smooth. Ger. Em. Ray. &c.

Stamens from four to six. (*Flower-scales* with a gold-coloured fringe. *Calyx* thin, sprinkled with glands, much wrinkled, closely investing the blossom, semi-transparent, tender, green; the segments purplish red. *Blossom* like the calyx, but not wrinkled; its segments so glued to those of the calyx as to be hardly separable therefrom. With.

(E. Bot. 2248. E.)—Ger. 1297. 2—Ger. Em. 1481. 4—Park. 1404. 3.

(A tall, elegant tree, with branches spreading to a vast extent, often curved and drooping. *Bark* deeply and widely sinuous. E.)

NORTHERN OR SMOOTH-LEAVED WYCH ELM. *U. glabra*. E. Bot. *U. montana*. β. Fl. Brit. Road beyond Dartford, and near Rumford. Ray.

We see them sometimes in fine harmony together, about the end of April and the beginning of May. In autumn also the yellow leaf of the Elm mixes as kindly with the orange of the Beech, the ochre of the Oak, and many of the other fading hues of the wood." The same ingenious writer further shows how consequential a part the spray is, in fixing the character of the tree: "There is as much difference in the spray, as there is in the foliage, or in any other particular. The branch of the Elm hath neither the strength nor the various abrupt twistings of the Oak; nor doth it shoot so much in horizontal directions. Such also is the spray. It has a more regular appearance, not starting off at right angles, but forming its shoots more acutely with the parent branch. Neither doth the spray of the Elm shoot, like that of the Ash, in regular pairs, from the same knot; but in a kind of alternacy. It has generally, at first, a flat appearance: but as one year's shoot is added to another, it has not strength to support itself; and as the tree grows old, it often becomes pendent also, like the Ash; whereas the toughness and strength of the Oak enables it to stretch out its branches horizontally to the very last twig." In Lombardy and other parts of Italy, Elm trees, (exclusive of those living props appropriated to the "*arbutive vites*" of the vineyard), are very frequently entwined with Vines; a mode of culture which Milton presumes might have engaged the attention even of our first parents in Paradise:

—————"They led the vine
To wed her *Elms*; she, spoused, about him twines
Her marriageable arms, and with her brings
Her dower, the adopted clusters, to adorn
His barren leaves."

And though in our northern clime it were unreasonable to expect much produce of fruit,

—————"the clusters clear
Half through the foliage seen;"

we would recommend the practice in particular situations, as highly ornamental. During a scarcity of grass, by judicious daily prunings of Elm, sheep may be entirely subsisted. This species of rural economy might perhaps have been encouraged by the invaders from an arid clime, never blessed with the perennial verdure of the green Isles of the Ocean. The Mantuan bard descants on the "foodful leaves" as so employed in his day;

—————"fecundæ frondibus *Ulmis*." Georg. il. E.)

Growing to a very large size in Edgbaston Park, near Birmingham. (Frequent in the northern part of England and in Scotland. E.)

T. March—April.*

U. MONTANA. (Leaves doubly serrated, unequal at the base, egg-shaped, but taper-pointed; flowers penduncled, five or six-cleft; fruit round. E.)

(*E. Bot.* 1887. E.)—*Lob. Ic.* ii. 189. 2—*Ger. Em.* 1481. 3—*Park.* 1404. 2.

Bark of the trunk very much cracked, that of the branches smooth. *Flowers* scentless, from six to fifteen in a corymbus; leaf-buds and flower-buds distant. *Gough.* Clefts of the calyx five, six, and in one instance four

* (The Wych Elm, (or possibly the Wych Hazel may have been intended in the ancient statutes), was once in repute for long-bows. Gilpin describes the Wych Elm as "more picturesque than the other sort, as it hangs more negligently, suspends its flowers on longer peduncles and more loosely spread out. The trunk soon divides into wide spreading, winged branches, but it seldom rises so high;" and Phillips observes "this kind" (indiscriminately Wych Elm and Wych Hazel), "is hardy enough to climb the steepes and flourish in the remotest highlands of Scotland." But we know not a better account of this tree than that afforded by the *Journal of a Naturalist*. "The Wych Elm can occasionally assume the appearance of elegance and lightness, and is usually less aspiring and more branching than the common Elm. It adventures further north than that tree. It affords a tough and valuable wood for the wheeler and millwright; the bark from the young limbs is stripped off in long ribands, and often used, especially in Wales, for securing thatch, and for various bindings and tyings, to which purpose its flexible and tough nature renders it well adapted. Gerard says that arrows were made of this tree before the use of fire-arms had superseded that truly British weapon. We have no indigenous tree that suffers from the advance of the winter season so early as the Wych Elm. Others may manifest its approach nearly as soon, but their splendour is augmented by a touch of the frosty air, not ruined and denuded like our Elm, whose leaves curl up, become brown, and flutter from their sprays, by constitutional mechanism alone, often as early as the middle of September. This character of itself marks a difference from the common Elm, which preserves its verdure long after this period, and when its season arrives, is tinged with a deep yellow hue, contributing a full share to the splendour of the autumn. The leafless sprays of the Wych Elm announce too early the unwelcome termination of our floral year, and its sober rugged foliage is scattered at our feet without preparation or a parting smile." The same observant writer states, "Trees in full foliage have long been noted as great attractors of humidity, and a young Wych Elm in full leaf affords a good example of this supposed power; but in winter, when trees are perfectly denuded, this faculty of creating moisture about them is equally obvious, though not so profusely. That leaves imbibe moisture by one set of vessels and discharge it by another is well known; but these imbibings are never discharged in falling drops: but, in the other case, the moisture of the atmosphere becomes gradually collected on the surface of the tree till it forms drops. In fact, the tree is no attractor but a condenser; and thus the gate of a field, or a stick, or a post, will run down with water from a mist driving against it on one side, and bedry on the other. *Vid. Juv.* On the same principle currents of air will be found under trees in summer, when little is perceived in open places. The air in its passage being stopped and condensed against the foliage of the tree, accordingly descends along the surface or front, and escapes at the bottom, where are no branches or leaves to interrupt its progress. In winter there is little to impede the breeze in its course, and it passes through, consequently at that season the air under a tree is scarcely more sensibly felt than in the adjoining field." p. 62. According to Lightfoot, "the var. most common in Scotland is the Broad-leaved Wych Elm. A decoction of the inner bark is an antiscorbutic. The Highlanders make good ropes of the same. The timber is hard and tough." The principal Wych Elm of a group, at Polloc, Renfrewshire, (as represented by Strutt's *Sylv. Brit.*), measures twelve feet girth, 88 feet in height, and contains 669 feet solid timber. One at Tutbury 16 feet girth: and, according to Plot, at Field in Staffordshire is a tree of the same kind 120 feet high, and 25 feet in circumference about the middle. E.)

and nine. *Stamens* five and six. *Summits* three. *St. Flowers* on long fruit-stalks. (The large hop-like fruit is abundant, and very conspicuous in May and June. *Sm. E.*)

The bark will peel from the boughs for many feet without breaking. The boughs spread themselves wider, and hang more down than those of *U. campestris*. Leaves and seeds much larger. Johnson in Ger. Em. Trunk soon dividing into long wide-spreading winged branches; when at its full growth seldom rises to above one third the height of *U. campestris*. It flowers when even under thirty feet high, while *U. campestris* seldom flowers till it has gained a much greater age and height. Branches very brittle. *St. Sm.*

WYCH HASEL. BROAD-LEAVED ELM. (Welsh: *Llwyfanen tydanddail*. *E.*) *U. montana*. C. B. Pin. *U. effusa*. Sibth. Shady lanes, and outskirts of woods. Ray. In Scotland and the north of England it seems to prevail in woods and brakes, as well as hedge-rows. About Kendal. Mr. Gough. (Very frequent and luxuriant in Hertfordshire. Smith. *E.*) T. March—April.*

SWERTIA.† Bloss. wheel-shaped; with nectariferous pores at the base of the segment: Caps. one-celled, two-valved.

S. PERENNIS. Blossoms five-cleft: root-leaves oval.

Jacq. Austr. 243—(*E. Bot.* 1441. *E.*)—Kniph. 7—Clus. i. 316. 2—Ger. Em. 433. 5—Barr. 91—H. Oz. xii. 5. 11.

(A beautiful plant. Stem upright, undivided, a foot high, rather quadrangular, smooth, but few leaves on it. Almost all root-leaves, on leaf-stalks, very entire, slightly veined, smooth. Spike terminal, upright. Fruit-stalks, opposite, angular, one-flowered, with floral-leaves at the base, sessile, elliptic-oblong, very entire. Flowers greyish purple, scentless.

* (Whether there be more than two distinct species of British Elm may be questionable. Several authors have attempted to define five or six, but we are not prepared entirely to acquiesce in so numerous a division of the genus. The best writers, on comparison, abound with discrepancies. We subjoin an abstract from a recent elaborate work of Smith.

U. campestris. Common Small-leaved Elm. *

Leaves doubly serrated, rough. Flowers nearly sessile, four-cleft. Capsule oblong, deeply cloven, naked.

U. suberosa. Common Cork-barked Elm.

Leaves pointed, rough, doubly and sharply serrated. Flowers stalked, four or five-cleft. Capsule almost orbicular, deeply cloven, naked. Branches spreading; their bark corky.

U. major. Dutch Cork-barked Elm.

Leaves rough, unequally and rather bluntly serrated. Flowers nearly sessile, four-cleft. Capsule ob-ovate, slightly cloven, naked. Branches drooping; their bark corky.

U. montana. Broad-leaved Elm. Wych Hasel.

Leaves pointed, rough, doubly serrated. Flowers stalked, loosely tufted, five or six-cleft. Capsule somewhat orbicular, slightly cloven, naked. Branches drooping; their bark even.

U. glabra. Smooth-leaved or Wych Elm.

Leaves elliptic-oblong, doubly serrated, smooth. Flowers nearly sessile, five-cleft. Fruit ob-ovate, naked, deeply cloven. *E.*)

† (In honour of the Dutch florist Emanuel SWERT, author of "Florilegium," 1612. *E.*)

Segments of the calyx awl-shaped, open. *Blossom* expanding; segments elliptical, sharp-pointed, spotted with black. *Stamens* awl-shaped. *Antthers* vane-like. *Seed-bud* egg-shaped, compressed. *Style* very short, deeply divided. Herb very bitter. Fl. Brit. E.)

MARSH FELWORT. In watery alpine meadows. (Found in Wales by Dr. Richardson, according to Hudson; but this discovery seems not to have been confirmed. E.) P. Aug.

GENTIANA.* *Bloss.* one petal, tubular at the base, without nectariferous pores: *Recept.* of the seeds two, placed lengthwise: *Caps.* one-celled.

G. PNEUMONANTHE. Blossoms five-cleft, bell-shaped, pedunculate: leaves strap-shaped.

Dicks. H. S.—Kniph. 8—*Fl. Dan.* 269—*E. Bot.* 20—*Gmel.* iv. 51. *A.—Matth.* 646—*Clus.* i. 313. 2—*Lob. Obs.* 166. 2—*Ger. Em.* 438—*Park.* 406. 1—*H. Or.* xii. 5. 12—*Ger.* 355—*Barr.* 51. 1—*J. B.* iii. 524. 1.

(*Stem* about a span high, upright, undivided, leafy, quadrangular. *Flowers* few, large, terminal and axillary, of a beautiful blue colour, plaited; the folds greenish. *Antthers* united at the base. *Styles* reflexed. The plant bitter to the taste. Fl. Brit. E.)

The flowers not being invariably opposite, even in large and cultivated specimens, that circumstance is omitted in the Sp. Char.

CALATHIAN VIOLET. MARSH GENTIAN. (HARVEST BELLS. Welsh: *Crwynllys y rhôs*; *Blodau Mihangel.* E.) Moist pastures. Stratton Heath, Norfolk. Mr. Crowe. Newton Heath, near Manchester. Mr. Caley. Rollesby Heath, and Hopton Heath, near Yarmouth. Mr. Wigg. In a marsh on a heath near Holmes Chapel, Cheshire. Mr. Hunter. Walney Isle. Mr. Jackson. (Near Bootle, and on Childwall Common, near Liverpool. Dr. Bostock and Mr. Shepherd. In Purbeck, and moist grounds on heaths, Dorset. Pulteney. Howgill Castle woods, Cumberland. Hutchinson. In a field between Maryport and Flimby, near the latter place. Mr. Winch. Bagerley Moor, Cheshire. Mr. W. Christy. Rough heaths near Holyhead. Welsh Bot. E.) P. Aug.†

(**G. VERNA.** Blossom five-cleft; salver-shaped, crenate; segments auricled at the base: leaves crowded, ovate. Sm.

E. Bot. 493—*Jacq. Obs.* 71—*Cam. Hort.* 15. 2—*Clus. Hist.* 315—*Lob. Ic.* 310. 2—*Ger. Em.* 436—*Parl.* 403.

Stem simple, supporting a single flower, ascending. *Leaves* rather fleshy, dotted with glands, ovate, not at all pointed; four or six in opposite pairs near the root, and two or three pairs on the stem. These pairs are united at the base so as to form a kind of cup round the stem. *Calyx* rather more than half the length of the tube of the blossom. *Blossom* fine blue, seldom so long as the stem; segments serrated and toothed; between each segment is a little blue bicornate appendage issuing from

* (Named after GENTIUS, a king of Illyria; who, if we rightly understand Dioscorides and Pliny, first discovered the antidotal virtues of a certain species. E.)

† This elegant plant may be worthy of garden culture, but requires a moist, loamy soil. "The gallant flowers hereof be in their braverie about the end of August:—of so beautifull a colour, that it passeth the very blew itselfe." *Ger.* E.)

a white stripe in the tube of the blossom. *Anthers* shorter than the tube. *Summits* two, infundibuliform; open on the inner side.

This species and *G. Bavarica* are nearly allied; the most obvious difference consisting in the tuft of leaves at the base of the stem, which does not exist in the *Bavarica*. This plant cannot be the *Gentianella fugax verna seu præcox*. Ray Syn. 275, if he has rightly quoted the figure of Col. Ecphr. t. 221. *G. Bavarica*. Jacq. Obs.

SPRING GENTIAN. Discovered by the Rev. J. Harriman and Mr. Oliver, growing in great abundance in Teesdale Forest, Durham, both on the low grounds and on the bordering mountains, where it is vulgarly called *Spring Violet*, or *Blue Violet*. It has since been found by the first-named gentleman in Birkdale, in the parish of Appleby; and also abundantly on Cronkley Fell, and other places in Teesdale. (On mountains between Gort and Galloway. Mr. Heaton, in Eng. Fl. E.) P. April—May. E.)

G. NIVALIS. Blossoms five-cleft, funnel-shaped: branches axillary, alternate, one-flowered: calyx with five slightly keeled angles.

(*E. Bot.* 896. E.)—*Fl. Dan.* 17—*Lob. Adv.* 131. and *Ic. i.* 3. 10. 3—*Hall. Enum.* 75.

(*Stem* upright, quadrangular, a few inches in height, branched, leafy. *Leaves* oval; *root-leaves* sharp-pointed. *Blossoms* upright, elegant, of a beautiful blue colour, outside slightly tinged with green. *Calyx* tubular, quinque-dentate, angles acute, scarcely keeled. *Fl. Brit.* E.) *Blossom* tube greenish, border of a beautiful blue. *Haller*; (with small segments between the larger ones: angles of the calyx tinged with brown. *Hook.* E.)

(SMALL ALPINE GENTIAN. E.) On Ben Lawers, Scotland. *Dickson.* *Linn. Tr.* ii. 290. A. Aug.

G. AMARELLA. Blossom five-cleft, salver-shaped: mouth bearded: calyx segments equal.

(*Hook. Fl. Lond.*—*Dicks. H. S. E.*)—*E. Bot.* 236—*Fl. Dan.* 328—*Kniph.* 7—*Walc.*—*Clus.* i. 316. 1—*Ger. Em.* 437—*Park.* 406. 3—*H. Ox.* xii. 5. 3—*Ger.* 354. 1—*Barr.* 510. 1—*J. B.* iii. 526. 2 and 3.

(*Stems* upright, quadrangular, leafy, of various heights, terminating in a branched panicle. *Leaves* egg-shaped, three-nerved, sessile. *Blossom* twice the length of the calyx: tube cylindrical, whitish. *Stamens* inclosed. *Styles* short, divided to the very bottom. *Plant* intensely bitter. *Fl. Brit.* E.) Only distinguishable from *G. campestris* by the calyx. *Linn.* *Lower flowers* often quadrifid, especially in plants which have been bitten off and have shot up afresh, in which case also it often produces very minute double flowers, the segments curling in, so as to form a kind of button. *Woodw.* (*Stem* from six to twelve inches high, often purplish. *Bloss.* purplish-blue, nearly and inch long. E.)

Var. 2. Blossom four-cleft.

Walc. named *G. campestris*.

Dunstable Hills. *Mr. Woodward.*

Var. 3. Early flowered. Ray Syn. 275.

Col. Ecphr. 221. •

Near Kendal, on the back of Hells-fell-nab. Ray was misinformed of this being the *Vernal Dwarf Gentian*. *Mr. Fitz-Roberts* told *Mr. Wilson*

that the plants he had mentioned to Petiver were the *Autumnal Gentian* flowering earlier than usual.

Gentianella fugax verna, seu præcox. Ray. *Gentianella purpurea minima.* Col. (*G. Amarella* β. Sm. reported as found by Sir J. Cullum on a heath between Grantham and Ancaster, and conjectured to be a dwarf variety which had survived the winter. E.) April—June.

AUTUMNAL GENTIAN. (Welsh: *Cwynnllys chwerw*. E.) In dry pastures, mostly on calcareous soil. (Canham Heath, near Bury; Broughton Heath, Huntingdonshire. Mr. Woodward. About Gordale, below the waterfall. Mr. Wood. Arthur's Seat, Edinburgh. Mr. Bingham. Abundant on Leckhampton Hill, near Cheltenham. Rev. S. Dickenson. Common on the chalky grounds of Dorset; in Nutford Field, on Pimper Down, and in Langton Coppice, near Blandford. Pulteney. Box Hill; and on lime-stone pastures from Sunderland to Castle Eden. Mr. Winch. Keswick. Hutchinson. On the Zig-zag and Hanger, Selborne. White's Nat. Hist. Beneath the precipice at Bryngwydryn, Anglesey. Welsh Bot. E.) River side opposite St. Vincent's Rocks, Bristol.

A. Aug.—Sept.

G. CAMPESTRIS. Blossom salver-shaped, four-cleft: mouth bearded: two outer calyx segments larger.

E. Bot. 237 - *Fl. Dan.* 367—*Barr.* 97. 2—*H. Ox.* xii. 5. row 3. 9.

(Much resembles *G. amarella*, but is generally of lower growth, and more branched; the calyx-leaves furnish the principal distinction; this plant having two, ovate, broad, decidedly larger than the others, which are lanceolate, or nearly awl-shaped; in the former plant the segments of the calyx are all equal. E.)

FIELD GENTIAN. (Welsh: *Cwynnllys y maes*. Gaelic: *Lus-a'-chrùbain*. E.) Mountainous pastures. About Kendal. Mr. Woodward. Llanberis, Wales; and Perian Round, Cornwall. Hudson. Boggy field adjoining to Horsforth Beck, four miles from Leeds, plentiful. And amongst the high rocks above the water-fall in Gordale. Mr. Wood. Stratton Heath, Norfolk. Mr. Crowe. (Common about Allerton Hall, near Liverpool. Dr. Bostock. A little below the Roman encampment, and elsewhere, near Painswick. Mr. O. Roberts. Near Hexham, and on the west side of Shewing Shields, Northumberland. Mr. Winch. Frequent in Anglesey. Welsh Bot. Pentland Hills. M. Arnott. Grev. Edin. E.)

A. Aug.—Oct.*

G. Centaurium, see *Chironia Centaurium*.

G. filiformis, see *Exacum filiforme*.

XANTHIUM.† Barren and fertile flowers on the same plant.

B. *Cal.* common, tiled: *Bloss.* one petal; funnel-shaped, five-cleft: *Recept.* chaffy.

F. *Involucr.* two-leaved, two-flowered: *Bloss.* none: *Caps.* double, prickly, bifid: *Nut* two-celled.

X. STRUMARIUM. Stem thornless: leaves heart-shaped, three-fibred towards the base.

* (The different species of Gentian abound with the bitter principle, and in some northern counties are substituted for Hepa. E.)

† (From *ξανθος*, yellow; the plant yielding a dye of that colour. E.)

Fl. Dan. 970—(*E. Bot.* 2544. *E.*)—*Blackw.* 444—*Fuchs.* 579—*J. B.* iii. 572—*Trag.* 839—*Lonic.* i. 65. 1—*Ger.* 604. 2—*Matth.* 1204—*Dod.* 39. 1—*Lob. Obs.* 319, *Ic.* i. 588. 2—*Ger. Em.* 809. 2—*Park.* 1223. 4—*Gars.* 642.

(*Stem* branched, twelve to eighteen inches high. *Leaves* alternate, rough and pubescent. *Racemes* axillary, leafy, few-flowered. *Fertile flowers* immediately beneath the others. *Bloss.* green. *Fruit* oval, downy, beset with rigid hooked prickles. *E.*)

LESSER BURDOCK. BURDOCK CLOTWEED. On dunghills and grounds highly manured, but rare. (Three miles from Portsmouth, on the London road; and about Dulwich. *Ray.* Road-side between Dulwich and Iwer, two miles from Colnbrook; between Staines and Egham. *Gerard.* *E.*) A. June—Sept.*

ERYNGIUM. Flowers capitate: general involucre many-leaved: Recept. chaffy: Seeds rough with flexible scales.*

E. MARITIMUM. Root-leaves roundish, plaited, spinous: flowering heads on fruit-stalks: chaff three-cleft.

Dicks. H. S.—(*Hook. Fl. Lond.* 185—*E. Bot.* 718. *E.*)—*Kniph.* 9—*Woodw.* 102—*Fl. Dan.* 875—*Blackw.* 297. 1 and 11—*Matth.* 680—*Clus.* ii. 159. 2—*Dod.* 730. 1—*Lob. Obs.* 490. 1—*Ger. Em.* 1162. 1—*Pet.* 999. 1—*Park.* 986. 1—*H. Oz.* vii. 36. 6—*J. B.* iii. a. 86. 2.

Plant a foot high, of a glaucous appearance, rigid. (*Root* very long, creeping, pungent. *Teeth of the cup* erect, spinous. *Fl. Brit. E.*) *Root-leaves* and *lower stem-leaves* three-cleft, on fruit-stalks; *upper* embracing the stem. *Leaf-stalks* embracing the stem. *Woodw.* *Leaves* mealy on the surface, veined, with a whitish ligneous border; angles terminating in sharp whitish thorns. *Blossom* whitish blue.

SEA ERYNGO. SEA HOLLY. (*Irish: Cuillin trahe.* *Welsh: Boglynon arfor.* *E.*) Sea-shore, common. At Yarmouth. *Mr. Woodward.* And on the sands at Hayle, Portowen, Portreath, and Penzance, Cornwall. *Mr. Watt.* North-shore, Liverpool. *Mr. Caley.* (At Shields Law, and Castle Eden, Durham. *Mr. Winch.* (Musselburgh, and Largo in Fife. *Lightfoot.* Ryde, Isle of Wight. *Dr. Bostock.* Allonby, Maryport, Cumberland. *Hutchinson.* Plentiful on the shores of Kent and Sussex. About Abergele, North Wales. On the Den at Teignmouth. *E.*)

P. July.—Aug.†

E. CAMPESTRIS. (Leaves embracing the stem, radical ones pinnatifid, spear-shaped: chaff undivided. *E.*)

Jacq. Aust. 155—*Fuchs.* 296—(*E. Bot.* 57. *E.*)—*J. B.* iii. a. 85—*Matth.* 579—*Fl. Dan.* 554—*Blackw.* 297. 2—*Ger.* 999. 2—*Clus.* ii. 157. 2—*Dod.* 730. 2—*Lob. Obs.* 490. 2—*Ger. Em.* 1162. 2—*Park.* 986. 2—*H. Oz.* vii. 36. row 2. n. 1. f. 2—*Trag.* 871.

(This plant is more branched, more slender, and somewhat greener than

* The leaves are bitter and astringent, (and were formerly in repute for the cure of scrophulous disorders, to which the specific name alludes. *E.*) A decoction of the whole plant affords a showy yellow colour; but it is better if only the flowers are used. Horses and goats eat it. Cows, sheep, and swine refuse it. (The seeds constitute the favourite food of the Carolina Parrot, or Parakeet. *Wilson.* *E.*)

† The leaves are sweetish, with a slight aromatic warmth and pungency. (The young flowering shoots, eaten like Asparagus, are grateful and nourishing. *E.*) The roots are supposed to have the same aphrodisiac virtues as the Orchis tribe. They are kept in the shops candied; (or may be given in decoction. *E.*)

the former species. E.) *Root and lower stem-leaves on leaf-stalks*, doubly and trebly wing-cleft. *Leaf-stalks* long, sheathing the stem at the base. Woodw. When the stalk is completely developed, the root-leaves are fallen off, or at least less perceptible. Roth. E.) *Petals* blue, sometimes white, or yellowish, (narrow, inflexed. E.)

FIELD ERYNGO. *Eryngium*. Blackw. a Trew, n. 297. St. (In waste ground, rare. E.) Watling-street Road, opposite Brockhall, near Davenport. (As long ago observed by — Thornton, Esq. and recorded in Morton's Hist. and Ray. The plant has been nearly extirpated at this station; though a specimen may now and then be collected near the Dial-house. E.) On a rock by the road leading down to the ferry from Plymouth into Cornwall. On the shore called Friar's Goose, near Newcastle-upon-Tyne. Ray Syn. 222, (supposed by Mr. Winch to have been originally introduced there from Holland. E.) About Sunderland Bal-last Hills and Newcastle. Mr. Robson. (Below Melling, in Yorkshire, plentifully. Blackstone. E.) P. July—Aug.*

HYDROCO'TYLE.† *Umbel* simple, stalked: *Involucr.* of two or four leaves: *Petals* entire: *Fruit* compressed, gibbous, divisible into two parts.

H. VULGARIS. Leaves target-shaped, cloven at the base: umbels five-flowered.

(Curt. N. E.—E. Bot. 751. E.)—Fl. Dan. 90—Dod. 133. 1—Iob. Obs. 209. 4—Ger. Em. 529. 5—Ger. 424. 3—Park. 1214—Pet. 6. 12.

Stems creeping, (prostrate, extending a few feet, E.) and striking root. *Leaves* circular, smooth. *Leaf-stalks* smooth, cylindrical. *Fruit-stalks* from the base of the leaf-stalks. *Umbels* two on a fruit-stalk, small, one springing out of the other, each containing from four to six flowers. *Flowers* small, reddish white, (on peduncles about an inch long; bractæas minute; petals broadly lanceolate. E.)

MARSH PENNYWORT. WHITE-ROT. (Welsh: *Toddaidd wen*; *Cron y gweunydd*. E.) Marshy ground. P. June.†

SANIC'ULA.§ *Umbellules* crowded, somewhat capitate: *Florets* of the centre barren: *Fruit* set with hooked prickles.

S. EUROPE'A. Root-leaves simple: florets all sessile.

Fl. Dan. 283—Blackw. 63—E. Bot. 98—Walc.—Fuchs. 671—Trag. 509—Riv. Pent. 31. *Sanicula*—Dod. 140. 1—Ger. Em. 948—Ger. 801—Col. Phytob. 16—H. Ox. v. 34. row 3. 1—Lob. Obs. 378. 2—Park. 532. 1—Muth. 1019.

(Root of numerous black fibres. Petals of the female florets deciduous. Fl. Brit. E.) A foot or half a yard high. *Root-leaves* five-lobed, segments

* (This plant, dried and powdered, forms the principal ingredient of a remedy celebrated in Spain for the cure of the bites of vipers and mad dogs, particulars of which may be seen in the Month. Mag. vol. 29. p. 414. E.)

† (From *uap*, water, and *ketuln*, a cavity; the form of the leaves being capable of containing water. E.)

‡ (Herb acrid, and, as Smith observes, like others of the umbelliferous tribe growing in wet places, probably poisonous. The farmers suppose that it occasions the rot in sheep. Vid. *Pinguicula vulgaris*. E.)

§ (A diminutive from *sano*, to heal or cure; alluding to its supposed vulnerary qualities, now altogether neglected. E.)

jagged, paler green and shining underneath. The central barren florets have no style, but in its place a concave glandular nectary filled with honey, similar to what crowns the germen in the fruit-bearing florets. Blossom whitish, (or sometimes stained reddish. E.)

WOOD SANICLE. (Welsh: *Golchwraidd*; *Golchyddes*. E.) Woods and thickets. P. May—June.

BUPLEURUM.* *Partial involucr.* largest, of five leaves: *Petals* involute: *Fruit* egg-shaped, gibbous, striated, not crowned.

B. ROTUNDIFOLIUM. General involucre none: leaves perforated by the stem.

Dicks. H. S.—E. Bot. 99—*Kniph.* 7—*Riv. Pent.* 46. *Perfoliata.*—*Ger.* 430. 1—*Matth.* 1156—*Fuchs.* 632—*Trag.* 482—*Blackw.* 95—*H. Ox.* ix. 12. 1. 2—*Do t.* 104. 1—*Ger. Em.* 536. 1—*Park.* 580. 1—*J. B.* iii. 6. 198. 1.

From a foot to half a yard high. *Leaves* oval, smooth, bluish green, (sometimes purplish at the edges, all decidedly perfoliate, alternate, sharp-pointed, fibred. E.) *Flowers* yellowish, on short fruit-stalks.

COMMON THOROUGHWAX OR HARE'S-EAR. Corn-fields, chiefly in a calcareous soil. Marham, Norfolk. Mr. Crowe. Carlby, between Stamford and Bourn. Mr. Woodward. Near Amesbury, on Salisbury Plains, plentiful. (Near the rocks at Uckfield, Sussex, by the foot-path to Pilt Down. Mr. Borrer, in Bot. Guide. In every arable field near Copgrove, Yorkshire. Rev. J. Dalton. Boxhill, Surry. Mr. Winch. Bidford, Haslor, and Grafton, Warwickshire: Badsey, and Bretforton, Worcestershire. Purton. E.) A. June—July.

B. TENUIS-SIMUM. (Umbels simple, alternate, three-flowered: involucre five awl-shaped bracteas. E.)

(*E. Bot.* 478—*Fl. Dan.* 1090. E.)—*Col. Ecphr.* 247. 2—*J. B.* vi. 301. 2—*H. Ox.* ix. 12. row 3.

(A stiff, acrid plant, smooth, branched from the bottom. *Branches* upright, spreading, gently winding, undivided, leafy. *Leaves* alternate, spear-shaped, narrow, sharp-pointed, widening at the base. *Fruit* angular. Fl. Brit. E.) *Flowers* yellowish.

LEAST THOROUGHWAX. (SLENDER HARE'S-EAR. E.) Salt marshes and meadows. Salt ditches, near Lynn Regis. Sir J. E. Smith. Malden, Essex. Boggy ground at the west end of St. Vincent's Rocks, near Cook's Folly. Dr. Broughton. Salt-water ditches, Wisbeach. Rev. R. Relhan. Banks of the Tees, near Stockton. Mr. Robson. (Abundant near the Semaphore, Dimchutch, Kent. Mr. Gerard E. Smith. E.)

A. July—Aug.

(**B. OBONTITES.** *Partial involucre* of five egg-shaped, awned, three-ribbed leaves: general, of three or four: branches widely spreading: umbels all stalked: leaves spear-shaped. *

E. Bot. 2468—*Jacq. Hort. Vind.* t. 91.

* (From *βίς*, an ox, and *πλευρά*, the side; from the large rib-like fibres of its leaves. E.)

Stem branched, a few inches high, and much divaricated: the lower leaves rather spatulate: *petals* cream-coloured, with a tinge of red: *anthers* yellow, large. *Herb* astringent and bitter.

NARROW-LEAVED HARE'S EAR. Gathered by the Rev. H. Beeke, D. D. on the marble rocks about Torquay, Devon. E. Bot. A. July. E.)

TORDYLIUM.* *Bloss.* radiate, all the florets fertile: *Involuc.* long, undivided: *Seeds* globular, compressed, with a tumid border.

T. MAXIMUM. Umbels crowded, radiate: leaflets spear-shaped, cut-serrated: (stem rough with deflexed bristles. E.)

(Hook. Fl. Lond. 200. E.)—Jacq. Austr. 142—Riv. Pent. 1. Tordylium—(E. Bot. 1173. E.)—Clus. ii. 201. 1—Ger. Em. 1021. 4—Lob. Ic. i. 737.

Stem striated, (hollow, three or four feet high, leafy, E.) rough with deflexed hairs. *Leaflets* seven-cut, pubescent, the odd one twice the size of the others. *Fruit-stalk* stiff, straight, much longer than the leaves. *Umbels* few, rigid, rough. *Umbellules* about nine. *Involucrum* five-leaved, slender, expanding, shorter than the umbel. *Involucellums* five-leaved, awl-shaped, as long as the umbellule, the two inner leaflets smaller. *Blossom* radiate, white, red underneath. *Florets* all fertile. *Seeds* circular, flattened, hispid; the border thicker, prickly, red. Linn. Ray suspects that neither this nor the next species are aboriginous, but rather the outcasts of gardens.

(GREAT HART-WORT. E.) Banks of fields. About London. Morison. Under the hedge on the north side of the Parks, Oxford. Dr. J. Sibthorpe and Mr. Woodward. Hedges near Etonwick, in the greatest abundance, (1803.) Mr. Gotobed. E.) A. June.

T. OFFICINALE. Partial involucrems as long as the flowers: leaflets egg-spear-shaped, (cut, crenate; stem pubescent. E.)

(E. Bot. 2440—Pet. 24. 6. E.)—Dod. 314—Lob. Obs. 425. 1—Ger. Em. 1050. 1—J. B. iii. b. 4. 2—Park. 906. 8—Ger. 894.

(*Stem* furrowed, covered with short, soft hairs, (leafy, about a foot high. E.) *Leaves* hairy and rough. *Leaflets* oblong, sharply serrated and cut. *Flowers* flesh-coloured, the outer petals very large, radiating. Fl. Brit. E.) *Lower leaves* with two pairs of little leaves. *Little leaves* hairy, on leaf-stalks, the odd one at the end with three lobes; those of the upper leaves spear, or strap-spear-shaped, deeply serrated. *Florets* tinged with purple. *Seeds* large, flat, with broad, raised, notched edges. Woodw. *T. maximum* and *officinale* are readily distinguished by observing that in the former the terminating leaflet of the stem-leaves is strap-spear-shaped, in the latter short and rather wedge-shaped; and that the partial involucrems in the former are longer, in the latter shorter than the florets. (Smith remarks that Riv. Pent. Irr. t. 2, and Jacq. Hort. Vind. t. 53, formerly referred to this plant, belong to another species, *T. apulum* of Linn. readily distinguished by having, in each marginal flower, only one radiant petal, with two equal lobes. Vid. Linn. Tr. v. xii. E.)

* (Possibly from the singular shape of the seed, appearing as if turned; from *τορνος*, a turning lathe, and *ειλω*, to turn round. E.)

SMALL HART-WORT. E.) Corn-fields. About Isleworth; Doody, in Ray. About London. Petiver. Sm. E.) (There is reason to suspect that the plant growing near Oxford is *T. maximum*. That shown to Mr. Woodward was certainly so. Both species are more properly natives of the south of Europe. Miller states that he found *T. officinale* growing on the sides of banks in Oxfordshire; but adds, "the seeds were sown there by Mr. Jacob Bobart, gardener at Oxford." E.) A. June.

T. Anthriscus, see *Torilis Anthriscus*.

T. nodosum, see *Torilis nodosa*.

(*Echinophora spinosa*, introduced in the earlier editions of this work, on the authority of the older writers, has not been found by any recent Botanist, and has long lost its claim to admission among British plants. E.)

CAUCALIS.* (*Fr.* elliptic-oblong, compressed transversely: Seeds with four rows of ascending, awl-shaped, hooked prickles, the interstices prickly, or rough: *Cal.* broad, acute, unequal: *Fl.* imperfectly separated. Sm. E.)

C. DAUCOIDES. (Umbels trifid, without general bracteas: partial ones three-leaved, three-seeded: leaves more than doubly compound. E.)

Jacq. Austr. 157—Riv. Pent. 24. *Echinophora*—E. Bot. 197—H. Or. ix. 14. 6—Pet. 27. 8—J. B. iii. 80. 1—Park. 920. 6.

Umbel cloven into three or five. Umbellules sessile, generally three. Involucrum none. Involucellum of three leaves. Florets equal, not radiated, reddish, most of them barren. Seed-prickles hooked, at some distance from each other, smooth. Linn. Leaves extremely elegant, finely divided. Involucellum of mostly five leaves. Woodw. (Herb bushy, nearly smooth. Stem deeply furrowed, hairy at the joints. Leaves on short, membranous-edged foot-stalks. Cal. very obvious. Sm. E.) Seeds rarely more than three in each umbellule attaining perfection.

FINE-LEAVED BASTARD PARSLEY. SMALL HEN'S-FOOT (OR BUR-PARSLEY. E.) *C. leptophylla*. Huds. Ed. 1; not *C. leptophylla* of Linn. Calcareous corn-fields and barren spots. Marham, Norfolk. Mr. Crowe. Carlby, between Stamford and Bourn. Mr. Woodward. Thorp-arch, Yorkshire. Mr. Aikin. (On Fulwell Hills, near Sunderland. Mr. Winch. Alne Hills, and fields about Drayton bushes, Warwickshire. Purton. E.) A. May—June.

C. LATIFOLIA. (Umbels trifid, with membranous bracteas: partial ones five-seeded: leaves winged, serrated. E.)

Jacq. Hort. 128—E. Bot. 198—Col. Ecphr. 97—Mill. 85—Garid. 22, at p. 146—H. Or. ix. 14. row 1, middle figure—J. B. iii. b. 80. 2—Pet. 27. 6—Park. 920, the two uppermost of the smaller figures at n. 6. 7.

(Herbage rough, somewhat glaucous. Stem taller, and less spreading than in the foregoing, three feet high, beset with minute ascending prickles.

* (Conjectured, by transposition of the first letter, to be derived from *δαυκα*, a little Carrot. E.)

Leaves three to six inches long; upper leaflets decurrent. *Bractees* with a broad, white, membranous margin. *Cal.* five broad, short spreading, permanent leaves. *Pet.* bright pink, inversely heart-shaped, the outermost of the marginal prolific flowers thrice as large as the rest. *Fruit* beset with double rows of straight, rigid, upright, rough, purplish bristles, and crowned with the calyx and styles. One of the most handsome plants of its tribe. Sm. E.)

BROAD-LEAVED HEN'S-FOOT. (GREAT BUR-PARSLEY. E.) Corn-fields. Crooks Edston, Hampshire. Hudson. Between Cambridge and Gogmagog Hills. Mr. Woodward. (In corn-fields at Oakley, and Thurleigh, Bedfordshire. Abbot. E.) A. July.

TORILIS. *Fr.* ovate, slightly compressed laterally. *Seeds* ribless, rough with scattered, prominent, ascending, rigid prickles: *Cal.* short, broad, acute, nearly equal: *Pet.* inversely heart-shaped, nearly equal: *Fl.* united. Sm. E.)

(*T. INFESTA.* Umbels of many close rays: general bractees scarcely any: leaflets pinnatifid: branches spreading. Sm. E.)

(Curt. E.)—Jacq. Hort. iii, 16—(E. Bot. 1314. E.)—Riv. Pent. 33. *C. humilis.*

(Smaller and more spreading than *T. Anthriscus*, from six to eighteen inches high. *Leaves* harsh to the touch, the terminal leaflet elongated. *Umbels* of from three to five rays. *Fl.* cream-coloured, or white; rarely flesh-coloured. *Fruit* larger than that of *T. Anthriscus*, crowned with the hoary calyx, and red styles. A species well marked by the want of general bractees, and by the spreading branches. Sm. E.)

(SPREADING HEDGE-PARSLEY. *Caucalis infesta* Fl. Brit. Curt. Hook. *C. Helvetica.* Jacq. and Gmel. Corn-fields in chalky soils, (and by road sides. E.) A. July—Aug.

(*T. ANTHRISCUS.* Umbels of many close rays, with numerous general bractees: leaflets pinnatifid: branches nearly upright. Sm. E.)

(Curt. E.)—Fl. Dan. 919—(E. Bot. 987. E.)—Jacq. Austr. 261—Kniph. 10—Col. Ecphr. 112—C. B. Pr. 80—Ger. Em. 1022. 5—Park. 921. 9—Pet. 27. 9—J. B. iii. b. 83. 1—H. Oz. ix. 14. 8.

Umbellules crowded. *Seeds* oblong. *Leaflets* egg-shaped, wing-cleft. *Branches* upright. Huds. *Leaves* hairy, with about two pair of leaflets; the terminating leaflet very long. *Involutum* leaves strap-shaped, from five to eight, not half the length of the umbel. *Umbel* spokes eight to ten. *Involutum* leaves spear-shaped, surrounding, and the length of the umbellule. *Florets* all fertile. (Whole plant rough with flattish bristles. Mr. O. Roberts. Very much resembling the former, but taller, more upright, more hirsute near the ground: the *florets* pinky white, those of *T. infesta* yellowish white: *seeds* of *infesta* by far the largest: *anthriscus* seldom found but in hedges and among bushes; *infesta* chiefly among corn, never in hedges. E.)

UPRIGHT HEDGE-PARSLEY. (Welsh: *Eulyn Berlllys.* *T. anthriscus.* Gertn. Sm. Grev. *Caucalis Anthriscus.* Huds. Lightf. With. Curt. Willd. Fl. Brit. Hook. *Tordylium Anthriscus.* Linn. Jacq. E.) Hedges. (A. July—Aug. E.)*

* Horses are extremely fond of it.

(*T. NODO'SA*. Umbels lateral, simple, nearly sessile: (stem prostrate: fruit partly granulated. Sm. E.)

Jacq. Austr. App. 24—(*Riv. Pent. 36. E.*)—*E. Bot. 199*—*Ger. Em. 1022. 6*
—*H. Or. ix. 14. 10*—*Pet. 27. 11*—*J. B. iii. b. 83. 2.*

Leaves finely divided, with a slight hairiness on each side. *Umbels* opposite to the leaves. Roughness on the *inner seeds*, resembling shagreen. *Woodw. Plant* from six to twelve inches high. *Bristles* of the *outer seeds* barbed, ending in a claw. (*Petals* white or reddish, small, nearly equal. E.)

(*KNOTTED HEDGE-PARSLEY*. (Welsh: *Troed y cym clymmog. T. nodosa*. Gærtm. Sm. Grev. *Caucalis nodosa*. Huds. With. Willd. Fl. Brit. Hook. *Tordylium nodosum*. Linn. *Jacq. E.*) Borders of corn-fields. A. June.

DAUCUS.* (*Bloss.* radiate; some florets abortive: involu-
crum pinnatifid: *Seeds* with several muricated ribs, and
intermediate bristles. E.)

D. CAROTA. Angles of the seeds four, distant, hispid: leaf-stalks
fibrous underneath: umbel concave when in seed.

Kniph. 5—*Lydw. 9*—*Fl. Dan. 723*—*Blackw. 546*—(*E. Bot. 1174. E.*)—*Woodv. 161*—*Riv. Pent. 28. Staphylinus*—*Ger. 873*—*Matth. 748*—*Dod. 679*—*Lob. Obs. 416. 2*—*Ger. Em. 1028*—*Park. 902. 1*—*Fuchs. 684*—*J. B. iii. b. 62*—*H. Or. ix. 13. 2*—*Trag. 440.*

Var. 2. Leaves of a dark glossy green, hairy, large, segments deeply cloven. Flowers all white.

Sea shore near Dover. *R. Syn. 218. n. 3.* Devon and Cornwall.

Var. 3. Leaves light green, hairy, segments slightly cloven. Flowers white, except the central floret which is deep crimson.

Hedge sides and fallow fields.

July.

Var. 4. Umbel proliferous.

Jacq. Hort. iii. 78.

Flowers white, with an umbellule of crimson florets rising from the middle of the umbel. Sent from Cornwall by Miss Giddy. (The florets are sometimes found entirely red, and the plant with harsh, rough, leaves, near Penzance. With. E.)

D. polygamus. Gouan. Shady places.

In all these varieties the *root* is pale yellow, (fusiform, in scent and flavour resembling the garden Carrot. E.) *Stem* from two to two and a half feet high; the segments of the *leaves* pointed; the *umbels* at first flat, or gently convex, but when in seed concave as a tea cup. *Involucrum* composed of about thirteen leaflets with deeply winged clefts; *Involucellum* of eight or nine leaflets, three of which are wing-cleft, the rest entire. The spokes of the umbel about forty, those of the umbellules about thirty. The *seeds* have four longitudinal deeply toothed ridges, like the comb of a cock, with three other imperfect ridges between them; the teeth flat, tapering to a point, but not prickly. (Leaflets pinnatifid, with linear-lanceolate acute segments. Sm. Whole plant aromatic. E.)

* (From *salu*, to heat; alluding to the warm, carminative quality of the seeds. E.)

WILD CARROT. BIRD'S-NEST. (Irish: *Mísh Lucan*. Welsh: *Moronyng meusydd*; *Nyth aderyn*. Gaelic: *Caran*. In pastures, waste places, and borders of fields, not unfrequent. Salisbury Craigs. Grev. Edin. Abundant upon the Ness, and other situations on both sides of the river Teign, Devonshire. E.) B. June—Aug.*

D. MARITIMUS. Angles of the seeds four large and three small: umbels convex when in seed: (leaflets dilated, fleshy, pinnatifid, with rounded segments. E.)

(E. Bot. 2560. E.)—Pl. XXXII.

Root a dirty white. **Stem** from one to two feet high, woolly and scored. **Leaves** hairy or rather woolly. **Leaflets** slightly cloven, broad, rounded at the end, succulent, curled. **Umbels** white, convex, not cupped when in seed. **Involucrum** nine wing-cleft leaflets, segments spear-shaped. **Involucellum** nine leaflets, six spear-shaped and three wing-cleft. **Seeds** with four large, broad, deeply toothed ridges, and three smaller intervening ones. The seeds resemble those of *D. muricatus*, but the plant differs in other respects. (Bristles of the seeds more flattened at the base, rather resembling those of some foreign species than the foregoing, from which this plant is surely distinct. Sm. E.)

Mr. Woodward suggests that the hoary hairiness may be a consequence of the sea-air, and that the umbels not cupping is owing to their small size. We, however, would observe that a hairy variety of *D. Carota* is found remote from the sea; and Mr. Dawson Turner, in Bot. Guide, p. 127, states, "I never saw on any part of the coast, excepting Cornwall, a plant approaching to *D. maritimus*, of which the whole habit is distinct from the common species; and the leaves very unlike in form, as well as appearance and hairiness, besides other differences pointed out by Dr.

* The wild Carrot has always been marked by Botanists as biennial; but, in our corn-fields, and also when sown in a garden, it is annual; it is the parent stock of the cultivated or garden Carrot, which is considered a biennial, though here and there a plant shoots up to seed the first year. The roots of the garden Carrot are white, or yellow, or deep red yellow. (Their more general use was introduced by the Flemings, in the reign of Queen Elizabeth. Carrots require a rich sandy loam. The hairiness of the seeds renders them troublesome to sow, either from adhesion, or blowing about if separated by the sieve. It has been advised to mix a small portion of sand with them, and to adopt artificial means for treading them down. By their strong antiseptic qualities, a marmalade made from Carrots has been found useful in preventing and curing the sea-scurvy. A thick syrupy matter, like treacle, has been obtained from them, but not sugar. In the Geographical Essays it appears, from experiments by Dr. Hunter, that, by distillation, an acre of Carrots will yield a larger portion of spirit than the like quantity of Barley. E.) The seeds have been sometimes used as diuretic and carminative; and are highly recommended in calculous complaints. An infusion of them has been found to afford relief in sharp fits of the gravel. Woodw. Carrots are a grateful and nutritious food for all kinds of cattle, and well worthy of more general cultivation by the farmer. (Hogs will fatten on them, but such food is in general too expensive. E.) Carriage horses will work upon them nearly as well as upon oats; but if too long continued, or given too freely, cattle may be severely disordered by their diuretic effects. Crickets are very fond of them, and are easily destroyed by a paste of powdered arsenic, wheat meal, and scraped carrots, placed near their habitations. A poultice of the scraped roots has been found to mitigate the pain, and abate the virulence, of phagedenic and cancerous ulcers. (Dr. Carey in Month. Mag. v. 27, adduces his own strongly marked case of the cure of the gravel by the infusion of Wild Carrot seeds, taken as tea morning and evening. His directions are very particular and satisfactory. On the sandy lands of Suffolk, Carrots form an important crop, but are liable to depredations from a small centipede, *S. electrica*, and the polypod *Polydesmus complanatus*, which eat the roots into various labyrinth. *Livia Dauci* is also found on the plant. E.)



Withering. Unless it suffer very material alteration from culture, which, I understand it does not, it appears to me to have as clear a right to be considered a species as any in our Flora."

The better to illustrate this plant we offer a sketch in which the general habit, and precise shape of the leaves, are accurately delineated.

CORNISH COAST CARROT. (Welsh: *Moronyng arfor*. E.) Dr. Withering first gathered this plant on the western coast of Cornwall, and at his request the Rev. J. T. Thompson, from whose observations the above description is chiefly supplied, paid particular attention to it. E.) Rocks on the south-west coast. (About Penzance. At Tintagel Castle; the Lizard, and elsewhere. Mr. E. Forster, jun. and Castle Treryn. Mr. D. Turner. Sea coast south of Sunderland. Mr. Winch. This station, Mr. Winch has since informed me, refers only to a stunted var. of *D. Carota*. The Rev. Hugh Davies observed a plant which he conceived to be *D. maritimus*, in the clefts of steep rocks, and somewhat out of reach, at Porth Dafarch, A. glesey. E.) A. July—Aug.

BUNUM.* Bloss. uniform: Umbel crowded: Seeds nearly cylindrical, striated, thicker towards the end: Cal. small, acute, unequal. E.)

B. FLEXUOSUM. Involucrum from one to three leaves, deciduous: stem leafless at the base, tapering downwards, zigzag: styles permanent: (fruit somewhat beaked. E.)

Curt. 273—(E. Bot. 988. E.)—Ger. Em. 1064. 1.—Tourn. 161. 2.

Root tuberous. Stem smooth, scored, but little branched. Leaves doubly winged; segments very slender, and tapering to a point. Involucrum seldom of more than one or two slender leaves, but in most instances altogether wanting, and after examining above fifty plants growing in different soils both in woods and open pastures, I could never find more than one with any general fence after the blossoms were opened. Involucellum mostly shorter than the umbellule, of three or four very small spear-shaped leaves. Umbel, spokes eight to twelve. Umbellule, spokes about sixteen. Styles, at first close, afterwards wide apart, but never reflexed. Flowers white.

(The true *B. Bulbocastanum*. Fl. Dan. 220. Ger. Em. 1064. 2. which is *Bulbocastanum majus* of Bauhin, but not of Gouan, may, as Smith observes, (should it ever be found in Britain), be infallibly discriminated "by its shorter, more abrupt fruit, and reflexed styles." It was said to have been discovered in Kensington Gardens, but Ray and Johnson acknowledge they only knew one species, which was probably *B. flexuosum*. E.)

The real *Bulbo-castanum*, (q. d. chestnut-root), of a larger size than ours, is called by the Italians *Pancaseole*, a name signifying bread and cheese, the deficiency of which it supplies either raw or boiled. E.)

COMMON EARTH-NUT. KIPPER PIG HAWK OR JUR-NUT. LESSER PIGNUT. (Irish: *Curran*. Welsh: *Bywi*; *Cylor*; *Cneun y ddaer*. Gaelic: *Braonan-backuill*. E.) *B. Bulbocastanum*. (Huds. Lightf. Relh. Curt. Hook. Grev. *B. flexuosum*. With. Sibth. Hull. *Abbot. Sm. E.) Meadows, pastures, orchards, and woods. P. May—June.†

* (Possibly from *Bovus*, a bill, or elevated spot; the plant loving dry situations. E.)

† The roots, eaten either raw, boiled, or roasted, are little inferior to chestnuts, and would be an agreeable addition to our winter desserts. (In Sweden they constitute an

CONIUM.* *Involucellum* extending half way round, of about three leaves: *Fruit* egg-shaped, gibbous, ribs compressed, wavy before the fruit is ripe.

C. MACULATUM. Seeds without prickles: stem much branched, shining, spotted.

Jacq. Austr. 156—*Curt.* i. 7—*Woodv.* 22—*Riv. Pent.* 75. *Cicuta*—(*E. Bot.* 1191. *E.*)—*Kniph.* 11—*Storck—Gent. Mag.* 1762. p. 273—*Clus.* ii. 200. 2—*Dod.* 461—*Lob. Obs.* 422. 1; *IC.* i. 732. 1—*Ger. Em.* 1061—*Park.* 933. 1—*H. Or.* ix. 6. row 3. 1—*Blackw.* 573. a. 6—*Fuchs.* 406—*J. B.* iii. 6. 175. 3—*Trag.* 474—*Matth.* 1098—*Ger.* 903. 1—*Blackw.* 451.

(*Leaves* compound, very much cut, shining, green. *Stem* two to four feet high, hollow, erect. *Root* fleshy, tap-shaped, whitish. *Petals* heart-shaped. *E.*) *Stems* and *branches* shining, spotted, and streaked with brownish or blackish purple. *Involucellum* of one leaf divided into three and four; *segments* at the edges white and membranous. *Outer petals* the largest. *Flowers* white. (*Plant* fetid when bruised. *E.*)

HEMLOCK. (*Irish:* *Minwear.* *Welsh:* *Cegiden guffredin.* *C. maculatum.* *Linn.* *With.* *Curt.* *Woodv.* *Sm.* *Hook.* *Grev.* *Willd.* *Jacq.* *Bull.* *Cicuta.* *Ray.* *Ger.* *Lob.* *Riv.* *Matth.* *Cam.* *Dod.* and of some *Pharmacopœias.* *E.*) *Hedges*, *orchards*, *rubbish*, *cultivated ground*, and *dunhills.*

B. June—July.†

article of trade. The vulgar name is derived from the resemblance of the roots to nut kernels, and the food they furnish pigs. It is to procure the Pig-nuts, that swine root the earth up in meadows. Ray mentions as a fact he had himself observed, that when there are no stalks or leaves left to indicate the places where they grow, and they occur only here and there, still those animals, by their scent, easily find them out, and root only in the right places—a singular and instructive example of the instinct with which the Creator has provided animals, in order to supply their wants. The passage may be found in 'The Wisdom of God manifested in the Works of the Creation,' one of the ablest works that ever appeared on the subject. *E.*)

* (From *nausea*, a turning round; as occasioning vertigo. *E.*)

† The whole plant is poisonous, and many instances are recorded of its deleterious effects: (to cite only one; two soldiers, quartered at Waltham Abbey, eat of these herbs, (collected in the fields adjoining), dressed with bacon and in broth. In a short time they were seized with vertigo, became comatose, convulsed, and died in about three hours. *Phil. Tr.* v. xlii. *E.*); but modern experience, according to some writers, has proved it to be less virulent than was formerly imagined; and though it may not cure Cancers, it is certainly a very useful medicine when properly prepared. In the first and second editions of this work, particular directions were given for making the extract, but such is the uncertainty of it, owing to the difficulty of preparing it, that I have for some years laid it aside, and prescribed only the powder of the dried leaves. Let the leaves be gathered about the end of June, when the plant is in flower. Pick off the little leaves, and throw away the leaf-stalks. Dry these selected little leaves in a hot sun, or on a tin dripping-pan or pewter dish before a fire. Preserve them in bags made of strong brown paper, or powder them, and keep the powder in glass phials, in a drawer, or something that will exclude the light, for the light soon dissipates the beautiful green colour, and with its colour the medicine loses its efficacy. From fifteen to twenty-five grains of this powder may be taken twice or thrice a day. I have found it particularly useful in chronic rheumatisms, and also in many of those diseases which are usually supposed to arise from acrimony. The nature of this book does not allow of minute details of the virtues of plants, but I can assure the medical practitioner that this is well worth his attention. Dr. Butler says, obstinate cases of gonorrhœa virulenta may be safely cured by doses of ten grains of the inspissated juice; a mode of treatment communicated to him by Baron Storck. (Mr. Whately, surgeon in London, bears ample testimony to the beneficial effects of the powder

SELINUM. *Flowers* all fertile : *Involucr.* reflexed : petals heart-shaped; equal : seeds small, (compressed, E.), with five membranous ridges, the lateral ones the largest.

given in doses of only four or five grains twice a day, for promoting a disposition to heal in obstinate ulcers on the legs; and its tendency to heal ulcerations of the lungs, after the inflammatory symptoms have abated, must be generally allowed. Dr. Home asserts its efficacy in chronic rheumatism, and paralysis rheumatica, when tried with perseverance. The extract is much used as a narcotic and sedative, often with obvious benefit. For numerous facts relative to this plant consult the works of Baron Haller. The Dispensatory gives the following very proper caution :—"We must not be misled by the official name *Cicuta* to confound it with the *Cicuta virosa* of Linnæus, which is one of the most violent plants produced in this country, and readily distinguished from the *Conium*, by having its roots always immersed in water, which those of *Conium* never are." Among our various researches for the elucidation of British plants, none have proved more perplexing, and ultimately less satisfactory, than those connected with Hemlock. The different commentaries on *Conium maculatum*, *Cicuta virosa*, and *Eranthe crocata*, from a deficiency of more early accurate discrimination, are almost inextricable. Medically, the subject is important, as comprising most powerful ingredients; and classically, it is far from uninteresting, as referring to the *mores antiquorum*. Under the first head we shall only further remark, that, notwithstanding a prevalent impression of its being less deleterious than the other plants above named, doubtless when properly prepared it will be found sufficiently potent for either good or bad purposes; and that whenever it has appeared to be inefficacious, mild, or inert, some other herb must have been substituted, or the virtues of the *Conium* been dissipated by exsiccation. Our faithful Gerard, concurring with Dioscorides and Pliny, should not be slighted, when he denounces "Hemlocke," as "a very evil, dangerous, hurtfull, and poisonous herbe; in-somuch, that whosoever taketh of it into his body dieth remediless." Wherefore, no doubt, a proper ingredient for the cauldron of the "weird sisters,"—

"For a charm of powerful trouble,
Like a hell-broth,"—

was

"Root of Hemlock, digged i' th' dark."

The second point is involved in greater mystery. Whether this plant be indeed justly and solely chargeable with the death of the Athenian sage, the real "*herba lethifera, morte Socratis clava*," from which, when bruised, was prepared a poisonous drink for state criminals condemned to death; or whether that opprobrium may not attach equally, if not altogether, to the other yet more "fatal sisters" above cited, it were no easy task to determine. Suffice it to add a passage which is more to the purpose than any other we have seen. "Haller was inclined to think that the plant which was fatal to Socrates and Phocion was not *Conium maculatum*, but *Cicuta virosa* of Linnæus, which the French writers have called *Cicutaria*. Lamarck on the other hand asserts, that *Conium maculatum* of Linnæus, his *Cicuta magna*, is the *Cicuta* of ancient authors, the very plant by which Socrates was poisoned; and censures Linnæus for changing its name to *Conium*. But if this great Botanist had looked into the Greek authors, he would have found that Linnæus only restored the most ancient name, and that the word *Cicuta* is entirely of Latin origin, unknown to the Greek language. Whether Linnæus would not have done better if he had retained the term *Cicuta*, which had been adopted by all modern Botanists before him, may, perhaps, be answered affirmatively. His *Cicuta virosa* must then, in concurrence with Haller's opinion, have been called *Conium*. But when the change was made, and had, through the extensive circulation of the works of Linnæus, obtained general currency, a revival of the ancient name, instead of removing, has in fact increased the confusion. Whatever may have been the plant by which Socrates was judicially murdered, our *Conium maculatum* unquestionably possesses deleterious qualities. Plato does not call the plant by which Socrates perished *Cicuta*, a word which he had never heard; nor does he give it any Greek name peculiar to it, but constantly uses the very general term φάρμακον, which denotes a strong potion, either poisonous or medicinal." Rees Cyc. E.)

S. PALUSTRE. (Lactescent: root generally single: stem solitary: styles divaricated after flowering: petals involute: rays of the umbel pubescent. E.)

Jacq. Austr. 162—E. Bot. 229—Riv. Pent. T. 20, *Thyssel. angustifol.*—Fl. Dan. 412—Dod. 699—Ger. Em. 1020—Park. 928 and 904. 6—H. Or. ix. 17. 2—Lob. Ic. i. 711. 1—C. B. Pr. 85.

The whole plant when wounded pours forth a milky juice. Root thick, branching, yellowish without, white within. Stem two or three cubits high, deeply furrowed, smooth, as is the whole plant. Leaves of a pleasant green, triangular, in the more luxuriant plants upwards of one foot and a half long, and as much or more in breadth; the uppermost sessile, trebly and quadruply winged, the last leaflets wing-cleft; wings with two or three clefts, varying from strap to oval-spear-shaped, very entire, reddish at the points. Umbel large, beautiful: spokes about thirty. Umbellules, spokes upwards of forty. Involucrum permanent, leaves, spear-shaped, about nine. Involucellum about twelve. Seeds roundish, blunt, edged with a kind of border, striated in the centre. Petals blunt, with two slight lobes, white; before flowering reddish on the outside. Woodw.

MARSH MILKWEED. (MILK-PARSLEY. E.) *S. sylvestre.* Jacq. Discovered in 1779 or 1780 by Mr. Seale, at Cannon Winder, near Flookburgh, Lancashire, in the ditches near the sand side, not very plentiful; and I have since found it round the sides of Ayside Tarn, three miles north of Cartmel. Mr. Hall. In Alder Swamps, near Yarmouth. Mr. Wigg. In great plenty in low wet moors, with *Iris pseudacorus*, near Whitgift, Yorkshire, four miles from the confluence of the Ouse and Trent. Mr. Wood. (On the banks of Whittlesea Mere, Huntingdonshire. Sir J. Banks. Bot. Guide. Prickwillow bank, Isle of Ely. Bishop of Carlisle. In a ditch at Ardencaple Wood. Mr. Hopkirk, in Hook. Fl. Scot. E.) P. June—July.*

ATHAMANTA.† Flowers all perfect: Petals inflexed, notched at the end: Fruit egg-oblong, convex, striated.

A. LIBANOTIS. Leaves doubly winged, flat; umbel hemispherical: seeds hairy.

Jacq. Austr. 392 and 392*—Relh. p. 113—E. Bot. 138—J. B. iii. b. 105—Pluk. 173. 1—C. B. pr. 77. 1.

Terminal umbel sometimes proliferous, with the spokes two inches long. Relh. The first pair of wings next the leaf-stalk placed crosswise. Lower leaves almost trebly winged, the wings being deeply wing-cleft. Woodw. Flowers white. Germens and styles purplish. (Root woody and bitterish. Stem about two feet high, upright, little branched, smooth, angular, and furrowed, leafy. Style permanent. E.)

MOUNTAIN SPINEL, OR STONE-PARSLEY. *A. Libanotis.* Huds. Ed. i. *A. Oreoselinum.* Huds. Ed. ii. (but not of Linn. E.) Chalk pit close, Hinton, Cambridgeshire. Rev. R. Relhan. Gogmagog Hills, Cambridgeshire.

* (The root is used in Russia as a substitute for ginger. The fetid, bitter juice concretes into an acrid resin. Sm. The larva of *Papilio Machaon* has been found on the plant. E.)

† (In honour of *ATHAMAS*, a king of Thebes, said to have discovered its virtues: but whatever these may have been, they are not now held in estimation. E.)

Ray. Keswick. Hutton. (Between St. Alban's and Stoney-Stratford. Hudson. P. Aug.—Sept.

PEUCED'ANUM.* (*Flowers of the disk abortive: E.*) *Involucrum* very short: *Fruit* elliptical, slightly ridged, compressed, bordered.

P. OFFICINALE. Leaves five times divided into three: leaflets thread-strap-shaped: (bracteas strap-shaped, nearly thread-shaped. E.)

Riv. Pent. 11. *Peuced.*—(*E. Bot.* 1767. E.)—*Fuchs.* 599—*J. B.* iii. 6. 36. 1—*Dod.* 317—*Lob. Obs.* 453. and *Ik.* i. 781—*Ger. Em.* 1054. 1—*Park.* 880. 2—*Ger.* 896. 1—*Trog.* 881.

(*Herb* smooth, slender, three or four feet high. *Root* spindle-shaped, resinous, smelling like sulphur. *Stem* upright, cylindrical, scored, branched, leafy. *Umbels* three or four inches broad. *Calyx-teeth* sharp-pointed, bent inwards. *Petals* equal, incurved. *Styles* reflexed. *Fl.* Brit. E.) *Petals* yellowish.

SEA SULPHUR-WORT. HOG'S FENNEL. Salt marshes, rare. Shoreham, Sussex. Walton, near Harwich, Essex; and near Feversham, by the river side. R. Syn. (On a cliff by the sea at Hearn, six miles from Whitstable. Mr. Crow, in Eng. Fl. Never found at Yarmouth nor Cley: *Oenanthe pimpinelloides* was mistaken for it by Hudson. Mr. Woodward. E.) P. June—July.†

(CNIDIUM. *Fr.* ovate, acute, with equidistant, very sharp, ribs; interstices deep, concave; juncture contracted: *Cal.* none: *Pet.* equal, obovate, or inversely heart-shaped: *Styles* hemispherical at the base; subsequently elongated, spreading, cylindrical: *Fl. Recept.* annular, thin, undulated, erect; afterwards depressed: *Fl.* imperfectly separated, nearly regular. Sm. E.)

(C. SILAUS. Leaflets deeply pinnatifid; their segments opposite, decurrent; general bracteas one or two.

Jacq. Austr. 15—(*E. Bot.* 2142. E.)—*Crantz.* Umb. 6. and *Austr.* iii. 6—*Riv. Pent.* 58. *Seseli Prat.*—*Ger.* 1047. 1—*Park.* 904. 4—*J. B.* iii. 2. 171—*Ger.* 877—*Dod.* 310. 2—*Lob.* Obs. 425. 4; and *Ik.* i. 738. 1—*Ger. Em.* 1048. 2—*Park.* 904. 3.

(*Herb* smooth, dark green, one to two feet high. *Root* spindle-shaped *Umbellules* small, distant. E.) *Lower-leaves* trebly compound; the little leaves cloven into two or three spear-shaped segments. *Involucrum* one or two little leaves. *Involucellum* twelve spear-shaped leaves, deep purple or black at the ends. *Umbel* of about seven spokes. *Umbellules* twelve to twenty, and upwards. All the *florets* generally fertile, but

* (From *πικρα*, the Pine tree, and *δανος*, dry; from its emitting a strong ungrateful odour. E.)

† The roots have a strong fetid smell, and an acrid, bitterish, unctuous taste. Wounded in the spring they yield a considerable quantity of yellow juice, which dries into a gummy resin, and retains the strong scent of the roots. Its virtues have not yet been ascertained with precision; and the trial should be made with caution, as its qualities promise to be far from insignificant. The expressed juice is said to have been used medicinally by the ancients. E.)

some of the central ones sometimes barren. *Petals* pointed, yellowish. *Germens* crowned with a glandular yellow receptacle, turning to a deep red as the seeds ripen.

(MEADOW PEPPER-SAXIFRAGE. *C. Silaus*. Spreng. Sm. *Peucedanum Silaus*. Linn. With. Jacq. Willd. Hook. Moist meadows and pastures. P. July—Sept.*

CRITH'MUM.† (*Florets* uniform, all fertile: *Fruit* oval, striated, coriaceous: *Petals* broad at the base: *Calyx* entire. E.)

C. MARITIMUM. Leaflets spear-shaped, fleshy.

Jacq. Hort. ii. 187—(E. Bot. 819. E.)—Kniph. 8—Dod. 705. 1—Lob. Obs. 213. 2; and Ic. i. 392. 2—Ger. Em. 533. 1—J. B. iii. 2. 194—H. Ox. ix. 7. row 1. 1—Lon. 1. 257—Matth. 489—Ger. 427. 1.

(Whole plant very succulent, obscure green, and fleshy. *Stems* about a foot long, not very upright, cylindrical, leafy but little branched. *Umbels* hemispherical, crowded, yellowish. *Leaflets* strap-spear-shaped, smooth, glaucous. *Petals* greenish white, small, incurved. E.)

ROCK SAMPHIRE. (SEA SAMPHIRE. Irish: *Creuhing*. Welsh: *Corn Curw*; *Ffenig y môr*. E.) Sea coast. On the chalk cliffs near the Needles, Isle of Wight. Stokes. On all the cliffs of the Cornish coast. Mr. Watt. On the rocks at Dunnerholme, and above Cartmel Wells, on the sea shore, growing out of the crevices of the rocks and difficult to reach. Mr. Atkinson. (Rocks by the sea side south of Whitehaven. Hutchinson. Mull of Galloway. Mr. Winch. Rocks of Babicombe bay, Devon, covered with it. Rev. Pike Jones. In the crevices of the cliffs in Portland, and on the Purbeck coast, especially about Tineham, whence great quantities are collected for pickling. Pulteney. On the Holmes Islands, in the Severn. On the cliffs of the South Foreland, and Hay cliff, near Dover, rendered classical ground by the sublime description of Shakspeare. E.) P. Aug.†

HERACLE'UM.§ *Involucr.* deciduous: *Flowers* radiate: *Petals* incurved, notched at the end: *Seeds* compressed, membranous, encompassed by a narrow border.

* (The plant being fetid when bruised, has been supposed to give a rank flavour to milk and butter, but Smith says it is more usually rejected than eaten by cattle. E.)

† (From κριθή, barley; the seeds somewhat resembling that grain. E.)

‡ ("Come on, Sir, here's the place—stand still. How fearful
And dizzy 'tis, to cast one's eyes so low!
The crows, and choughs, that wing the midway air,
Show scarce so gross as beetles: half way down
Hangs one that gathers Samphire: 'dreadful trade!"

Samphire, detestive in quality, warm and aromatic in flavour, is much sought after for pickling, sometimes at the risk of human life, (men being suspended from the rocks by ropes,) though other plants procurable at less hazard, as *Salicornia* and *Aster*, are frequently substituted. It is, likewise, eaten raw as a salad. This trivial name is supposed to be derived from the French *Sy. Pierre*, though not easily connected with the subject before us. We could almost imagine that some reference must have been whimsically intended to the original meaning of the word *Peter*, a rock, such being the invariable locality of our plant; as likewise to its pre-eminence both in station and utility. E.)

§ (Supposed from Ἡράκλῆς, Hercules, as dedicated to him. Bohmer rather apprehends it to have been named after Heraclides, the father of Hippocrates. E.)

H. SPHONDYL'IUM. (Leaves pinnate: leaflets pinnatifid, deeply serrated. E.)

Kniph. 11—(*E. Bot.* 939. E.)—*Blackw.* 540—*Riv. Pent.* 4. *Sphond.*—*H. Oz.* ix. 16. row 1. 1. f. 2—*Dod.* 307—*Lob. Obs.* 401. 2; *Ik.* i. 701. 2—*Ger. Em.* 1009—*Park.* 953—*Pet.* 24. 1—*Park.* 954. 3—*Matth.* 791—*Fuchs.* 53—*J. B.* iii. 2, 160—*Trag.* 437.

(A coarse, rank plant. *Stems* four or five feet high, strong, furrowed, angular, branched, leafy, rough with white spreading hairs. E.) *Leaf-stalks* spreading out at the base into a kind of foliicles, membranous, woolly at the edges, and in its younger state sheathing and inclosing the fruit-stalks and umbels. *Stem-leaves* winged, large. *Leaflets* about two pairs, jagged, and indented, the odd one cloven into three. *Outer* florets radiate, *central* ones nearly equal. *Seeds* with three ridges on each side. *Flowers* white.

COW PARSNEP. MADNEP. HOGWEED. (Welsh: *Efur cyffredin*; *Cyon.* E.) Hedges, meadows, pastures. B. July.*

Var. 2. (*Angustifol.*) *Narrow-leaved.* Little-leaves spear-shaped. St.

Jacq. Austr. 174—*Pluk.* 63. 3—*Pet.* 24. 2—*Park.* 954. 2.

I have found the *root-leaves* of this and of *H. Sphondylium* rising from the same root. *Leaves* winged, *wings* with mostly three lobes; *lower-lobes* long, and standing nearly at right angles give the cross-like appearance; *lobes* strap-spear-shaped, deeply and doubly serrated. Woodw.

(*H. angustifolium.* Huds. Sm. Fl. Brit. not of Linn. E.) Hedges. About Harefield. Blackstone. Between Okeover and Ashbourne. Stokes. Berkhamstead, Hertfordshire. Mr. Woodward. In woods and other places about Hayes, near Oswestry, as common as the first sort. Seeds gathered October 4, 1770, were sown January 2, 1771, and produced plants which flowered in 1772, and many of their progeny now occupy

* In Poland and Lithuania, the poor people prepare a liquor from the leaves and seeds, which undergoes a fermentation, and is drank instead of ale. The stalks when peeled, are eaten by the Kamschatkans. The Russians take the leaf-stalks of the root-leaves, peel them, and hang them in the sun to dry a little; then they tie them in bundles, and hang them up again till they become yellow: in this state they put them into bags, and a mealy concrete like sugar forms upon the surface of them. This they shake off, and treat their guests with it as a great delicacy. They likewise distil an ardent spirit from it. Gmel. Sibr. i. 214, (which the Scottish editors of *Encyc. Brit.*, with unmerited complacency, suggest, may prove "a good succedaneum for whisky:" truly a most undesirable acquisition; for as a patriot poet justly deplores,

"O' a' the ill's poor Caledonia

E'er yet pree'd, or e'er will taste,

Brew'd in hell's black Pandemonia,

Whisky's ill will scaith her maist." Macneill. E.)

Attempts have been made to manufacture sugar from this plant, which the Kamschatkans call *Ratsch*, (sweet-herb), but forty pounds of the dried stalks only yielded a quarter of a pound of sugar. The peelings of the stalks are acid. The leaves are a favourite food of rabbits, hogs, and asses. Cows, goats, and sheep eat them; horses are fond of them. In cultivation, experimentally, it is said to be an early and productive plant, bears mowing well, and is relished by cattle, possessing considerable nutritive power. Hort. Gram. *Hellodes Phellandrii*; as also the minute *Puccinea Heraclei*, blackish, surrounded by a ferruginous epidermis, Grev. Scot. Crypt. 42, are found upon this plant. (Miller adduces several reasons to prove that the common Cow Parsnep of Siberia, which the inhabitants make an article of food, is not our plant, but rather *Sphondylium maximum* of Breynius. Pulteney. E.)

the same spot, January 1789. Mr. Waring. (Woods near Kirkliston, near Edinburgh. Greville. E.) B. July.

LIGUSTICUM.* *Flowers* uniform, all fertile: *Petals* involute, undivided: *Fruit* egg-oblong, tapering at each end, five ridges on each seed.

L. SCOTICUM. *Leaves* twice ternate.

(*E. Bot.* 1207. E.)—*Pluk.* 96. 2—*Pet.* 26. 11—*Penn. Tour.* ii. 24. at p. 205—*Herm. Par.* 227—*Fl. Dan.* 207.

(*Fruit* longer and more distinctly winged than in *L. Cornubiense*. *E. Bot.* E.) *Leaves* glossy underneath. *Linn.* *Little leaves* oblong-wedge-shaped, entire below, above irregularly serrated, and sometimes deeply cut. *Woodw.* (*Root* fusiform, pungent, twelve to eighteen inches high, often stained with red. *Stem* upright, the upper part a little branched, cylindrical, scored, smooth, leafy. *Bloss.* white, small, equal. *Anthers* red. *Plant* aromatic. E.)

SCOTTISH LOVAGE. SEA-PARSLEY. (Gaelic: *Siunas*. E.) Rocks and cliffs by the sea-side in Scotland and in the western isles. Near Queen's Ferry. Near Kinghorn, Scotland, Mr. Whately. At Weams Castle, Fifeshire; and on the coast between Arbroath and the Red-head, Angusshire. Mr. Brown. Cramond Island, six miles from Edinburgh. Dr. Hope. (Near Wick, in Caithness. Mr. McLeay. Amongst rocks on the north side of Dunstanburgh Castle, July 18, 1804; and near Bamboorough Castle, Northumberland; the only English stations. Mr. Winch. E.) P. July.†

L. CORNUBIENSE. *Root* leaves doubly compound, (rough-edged, E.) cut: *stem* leaves in threes, spear-shaped, entire: *furrows* of the seeds indistinct.

(*E. Bot.* 683—*Sm. Ic. Pict. Fasc.* ii. E.)—*Ray* 8, at p. 209—*Pet.* 26. 9.

(*Root* spindle-shaped, contracted at the crown, descending to a great depth; when wounded, discharging a yellowish resinous juice. *Stem* two or three feet high, upright, branched, cylindrical, scored, roughish, purplish towards the bottom, but little leafy. *Flowers* white, regular, and uniform. *Petals*, oblong, acute, turned inwards, channelled at the back. *Fruit* egg-oblong, scored on both sides, with ribs but little prominent. *Seeds* egg-shaped, black. *Sm.* E.)

CORNWALL SAXIFRAGE. CORNISH LOVAGE. Cornwall. P. July.

Ever since the time of Ray this plant seems to have eluded the researches of Botanists; only one specimen was known to exist; and some concluded that the species was extinct; but a few years ago Mr. Pennington discovered it in great plenty in a field near Bodmin, which had then been ploughed, after having lain fallow for ages. Being at Bodmin in June, 1793, I applied to Mr. Gilbert, the proprietor of the land, who very obligingly sent a person to conduct me to the field in which Mr. Pennington had re-discovered the plant. This field is more than a mile north of Bodmin; the furze is again growing upon it, but not a single plant of

* (From LIGURIA, a country in which it abounds. E.)

† (*Siunas* of the Isle of Sky, where it is valued. E.) The root is reckoned a carminative, and an infusion of the leaves, in whey, good physic for calves. It is besides used as food, either as a salad, or boiled as greens. *Penn. Tour.* 1772. p. 310. (though nauseous to those unaccustomed to it. E.) Horses, sheep, and goats eat it. Cows refuse it.

Ligusticum was to be found. Dr. Hall favoured me with his company on this occasion, and we searched the surrounding fields and hedge rows to no purpose. At length, in a field about half a mile further from Bodmin, on ground sloping into a valley facing to the west, and nearly at the bottom of the slope, we discovered a few plants amongst the furze. It therefore appears probable that it will soon be lost again, cattle being so fond of it as to eat it down wherever they can get at it. The few specimens we detected were so protected by thorns and briars as to be inaccessible to cattle. (Mr. Stackhouse informs me that he has since observed it plentifully at Hungerill, in the parish of Cardynham, near Bodmin, on the sloping side of a barren hill. "I do not find," (continues Mr. Stackhouse,) "the radical leaves in threes, as represented in Ray's Synopsis, but rather twice ternate, as expressed in Sm. Ic. Pict. Fasc. ii. I think the circumstance of having leaves of two distinct shapes, is not that the one are radical and the other not, for both arise from the crown of the root. The spindle-shaped root is constant and very distinctive. In Smith's figure, the left hand leaf in the plate admirably describes the difference of the radical leaf from the others, as it consists in the form of the lobes, and the smaller number of segments, not in a trifoliate leaf as in Ray's figure." From the woody quality of the root I suspect it to be perennial." With.

(In a wheat field, and in an adjoining coppice called Marget, or Margaret Wood, about three furlongs from the Bodmin turnpike, that leads to Launceston. Sir T. Cullum; and in Draw Wood, Bradoc. Mr. E. Forster, jun. Bot. Guide. Hitherto this very local and rare plant has never been found in any other part of this island, though not unfrequent in the south of Europe, and in Greece. E.) P. July.

ANGELICA.* Bloss. equal, all fertile; petals bent inwards: Styles reflexed: Umbellules globose: (Seed hemispherical, three-winged. E.)

A. ARCHANGELICA. Leaves winged: leaflets unequally serrated, the terminal one three-lobed.

(E. Bot. 2561. E.)—Fuchs. 124—Trag. 421—Job. Ic. 698. 2, and Obs. 399—Dod. 318. 1—Ger. Em. 999. 1—Matth. 814. 2—Tabern. 230. 1—H. Ox. ix. 3, row 2. 1—Ger. 846. 1.

(Root thick, fleshy, resinous. Stem upright, five feet high, branched, hollow, cylindrical, smooth, furrowed. Umbels globular, many-spoked. Umbellules thick, hemispherical. Calyx extremely small. Petals egg-shaped, greenish white. Fruit compressed, sharply ribbed. Fl. Brit. E.) The serratures on the leaflets in *A. sylvestris* are fine, regular, and the leaflets otherwise entire; but in this species the leaflets are broader and with more of a truncated appearance of the base, the serratures much larger, very irregular, and some of them cleft into three segments. The involucrellums are sometimes much longer than the Umbellules.

(ANGELICA. In watery places, rare. Near Bungay, and elsewhere in Norfolk and Suffolk. Woodward. About the Tower of London. Doody. Among reeds by the side of the Thames, between Woolwich and Plumstead, very abundantly. Mr. Girard. E.) Broadmoor, about seven miles north west from Birmingham. B. Sept.

* (Possibly so denominated from the exalted virtues of some species which cannot now be ascertained. E.)

In a cultivated state this is the *Garden Angelica*, figured in Blackw. 496, Kniph. 4, and Trag. 422 also badly in Fl. Dan. 206.*

A. SYLVES'TRIS. Leaflets equal, egg-spear-shaped, serrated.

(E. Bot. 1128. E.)—Ludw. 178. 179—Fuchs. 125—Tabern. 230. 2—Trag. 422—Lob. Ic. 699. 1—J. B. iii. 2. 144—Woodv. 265—Dod. 318.* 2—Ger. Em. 999. 2—Ger. 846. 2—Matth. 814. 3—H. Ox. ix. 3. row 2. 2—Park. 940. 2—Lon. i. 227. 2—Riv. 17.

(Root large and fleshy. Styles purple. E.) Spokes sometimes nearly approaching to forty. Fruit-stalks eighty. Relh. Involucrum none, or rarely, of one or two very small, slender leaves. Involucellum permanent. Leaves five to twelve, awl-shaped, unequal. Blossom white, more or less tinged with purplish red. Seeds, border membranous, with three ridges on the outer side. (Stem two or three feet high, cylindrical, smooth, leafy, purplish, glaucous upwards. E.)

WILD ANGELICA. (Irish: *Bonan Leane*. Welsh: *Llys yr Angel y goedwig*. E.) Marshy woods and hedges, frequent. P. June—July.†

SIUM.‡ Flowers uniform, all fertile: Involucrum many-leaved: Petals heart-shaped: Styles reflexed: Seed nearly egg-shaped, striated.

S. LATIFOLIUM. Leaves winged: leaflets egg-spear-shaped, regularly and sharply serrated; the terminal leaflets three-cleft: umbels terminal.

Hook. Fl. Lond. 110.—Jacq. Austr. 68—E. Bot. 204—Fl. Dan. 246—Riv. Pent. 78. Sium—Dod. 589—Lob. Obs. 113. 1; Ic. i. 208. 1. 2—Ger. Em. 256. 2—H. Ox. ix. 5. 2—Pet. 26. 2—Ger. 200. 1—Ger. Em. 256. 1—Park. 1240. 1—J. B. iii. 2. 175. 1—Pet. 26. 1.

(Stem deeply sulcate, angular. Fl. Lond. E.) Leaflets of the root-leaves in marshy places sometimes deeply cut, and the segments of such as are under water strap-shaped. Huds. Involucrum, leaflets strap-spear-shaped, toothed. Woodw. A large strong plant five or six feet high. Flowers whitish. (Fruit small, striated. E.) §

BROAD-LEAVED SKERRETT. GREAT WATER-PARSNIP. (Irish: *Folaght*. Welsh: *Dyfr-foronyn llydanddail*. E.) Not unfrequent in rivers and fens. Moors near Pitchcroft, Worcester. Dr. Thomson. In Norfolk, frequent. Mr. Woodward. Isle of Ely. Dr. Stokes. Pool in Nottingham Park. Dr. Arnold. (In Cors ddygai, near Berw, Anglesey. Welsh Bot. Duddingston Loch, near Edinburgh. Mr. Yalden. E.) P. July—Aug. §

* (The root, containing an essential oil and acrid resin, is used in some distilled waters, and the aromatic candied stalks by the confectioners presented in desserts to promote digestion. For these purposes they are cultivated largely by the gardeners near London, the tender stalks being cut in May. E.)

† It is warm, acrid, bitter, and aromatic; but the cultivated kind possessing these properties in a higher degree, this has been long neglected. *Papilio Mochaon* feeds upon it. Cows, goats, and swine eat it. Horses refuse it. Linn. A horse eat the flowering stem. St.

‡ (From *σιωω*, to shake, as agitated by the stream in which it grows. E.)

§ Horses and swine eat it. Sheep are not fond of it. The roots are noxious to cattle, (rendering them quarrelsome and pugnacious. The seeds of this, and of *S. angustifolium*, are aromatic and warm to the taste. E.)

3. **ANGUSTIFOLIUM.** Leaves winged; leaflets irregularly lobed and serrated: involucre wing-cleft: umbels on fruit-stalks, axillary: (stem upright. E.)

Hook. *Fl. Lond.*—Jacq. *Austr.* 67—*E. Bot.* 139—*Riv. Pent.* 79. *S. minus*—*Fl. Dan.* 247—*Park.* 1241. 2.

Involucrum, leaflets either entire, or serrated, or wing-cleft. Huds. (*Calyx* scarcely discernible. *Fruit* small. A less and weaker plant than the former. *Fl. Brit. E.*) *Flowers* white. This and *S. latifolium* are readily distinguishable by the specific characters, but the trivial names of *broad* and *narrow-leaved* are ill appropriated and tending to mislead, for neither the leaves nor leaflets of the latter are narrower than those of the former; and if there be a difference, it is generally the reverse of what the trivial names would lead us to expect. (*Leaves* more deeply serrated; *stems* only slightly striated, and rounder, (not angular,) than the preceding. Hook. E.)

NARROW-LEAVED SKERRET. UPRIGHT OR LESSER WATER-PARSNEP. (Welsh: *Dyfr-foronyn culddail.* E.) Common in ditches and rivulets. Norfolk. Mr. Woodward. King's Park, and meadows and ditches near Edinburgh. Mr. Brown. (In dykes east of Deal. Mr. W. Hutchinson. Sm. Obs. In the Stour, and other rivers near Blandford. Pulteney. Kingston Pool, near Stafford. E.) P. July—Sept.*

S. NODIFLORUM. Leaves winged: leaflets ovate, equally serrated: umbels lateral, opposite the leaves, sessile or on fruit-stalks: (stem procumbent. E.)

(*E. Bot.* 639. E.)—Woodv. 182—*Tourn.* 162—*H. Ox.* ix. 5. 3—*Pet.* 26. 3.

(Smaller than the preceding. *Fruit* egg-shaped. *Calyx* very indistinct. E.) *Stem* and branches generally trailing or floating on the water, and striking root at the joints. *Involucrum* deciduous. *Involucellum* of five, six, or seven spear-shaped reflexed leaves. *Flowers* white.

PROCUMBENT WATER-PARSNEP OR SKERRET. (Welsh: *Dyfr-foronyn sypflodruog.* E.) In rivers and ditches, frequent. P. July—Aug.†

S. REPENS. Stems creeping, (with radicles; E.) leaves winged: leaflets roundish, toothed, angular: (umbels on fruit-stalks, opposite the leaves. E.)

(*E. Bot.* 1431. E.)—Jacq. *Austr.* 260—(*Fl. Dan.* 1514. E.)

Smaller in all its parts than *S. nodiflorum*. *Leaflets*, the terminal one deeply divided into three lobes. Sibth. *Leaflets* roundish, egg-shaped, unequally serrated, serratures bluntish, the lower edge also generally deeply cut in one place.

(**CREEPING WATER-PARSNEP.** Welsh: *Dyfr-foronyn ymlusgawl.* Ditches and boggy meadows, rare. Found by Dr. J. Sibthorp in moist ground

* Its active properties demand farther inquiry.

† A young lady, six years old, was cured of an obstinate cutaneous disease, by taking three large spoonfuls of the juice twice a day; and I have repeatedly given to adults three or four ounces every morning in similar complaints, with the greatest advantage. It is not nauseous, and children take it readily if mixed with milk. In the doses I have given, it neither disorders the head, the stomach, nor the bowels.

called Cowley Bottom, near Oxford. On the bank of a pond at Fisher-row, five miles from Edinburgh, and in abundance on the moist parts of Guillon Links, East Lothian. Dr. Hope. (Goldington Green, and Stevington Bogs, Bedfordshire: Abbot. Sides of ditches on Datchet Common, Bucks. Mr. Gotobed, in Bot. Guide. Coldham Common, Cambridgeshire. Relhan. On Hatfield Forest, and in the road from Heybridge to Maldon. Mr. E. Forster, jun. In Tothill Fields, Middlesex, ditto. Ditches about Beverley. Teesdale. Near the coal-pits on Bovey Heathfield, Devon. Rev. J. Pike Jones. Bogs on the side of Abberley Hill, Worcestershire: Cookhill near Alcester. Purton. On the west end of Towyn y Capel, Holyhead. Welsh Bot. E.) P. June—July.

SISON.* *Involucrum* about four leaves: *Fruit* ovate, striated: *Styles* reflexed.

S. AMO'MUM. Leaves winged: umbels upright; (with about four rays. E.)

Jacq. Hort. iii. 17—(*E. Bot.* 954. E.)—*Blackw.* 442—*J. B.* iii. 2, 107—*Fuchs.* 655—*Trag.* 461—*Dod.* 697. 1—*Ger. Em.* 1016. 1—*Park.* 914. 1—*H. Oz.* ix. 5. 7.

Stem (about a yard high, E.) cylindrical, upright, scored, smooth. *Leaves* winged. *Leaflets* egg-shaped, cut, serrated, but the uppermost more finely divided. *Umbel* of four spokes, the fourth in the centre. *Involucrum* of three leaves. *Involucellum* of five leaves, very small. Linn. *Root-leaves* of several pairs of little leaves, the terminating one cloven into three. *Stem-leaves* from two to three pairs; upper leaves of two pairs, deeply and irregularly laciniated, the lowermost pair winged, and much longer. *Umbels* pendulous before flowering. Woodw. *Umbels* mostly terminal. *Flowers* white. (*Herb* strongly nauseous to the smell. *Seeds* aromatic and pungent. E.)

(**HEDGE HONEWORT.** E.) **BASTARD STONE-PARSLEY.** Moist woods and hedges. P. Aug.—Sept.—(A. or B. Sm. E.)†

S. SE'GETUM. Leaves winged: (leaflets roundish, numerous: E.) umbels pendulous.

Jacq. Hort. 134—*E. Bot.* 228—*Ger. Em.* 1018—*Park.* 932—*H. Oz.* ix. 5. row 2. 6.

(*Herb* slightly aromatic. *Stems* spreading, twelve to eighteen inches high, branched, cylindrical scored, rush-like, leafy. *Calyx* five-toothed. *Fruit* egg-oblong, ribbed, aromatic. E.) *All the leaves* with numerous pairs of little leaves. *Umbel* spokes three to five, very unequal. *Umbellules* spokes six or seven, very unequal. Wood. *Little leaves* egg-shaped, deeply cut and serrated; serratures finely pointed. *St. Petals* minute, white (or pinkish involute. *Anthers* reddish. E.)

(**CORN HONEWORT.** E.) **CORN PARSLEY.** Corn-fields and hedge-sides in chalk and clay. Bingham, Norfolk. Mr. Crowe. (Rare in the midland counties. On a ditch bank between Hanbury and Droitwich; Badsey, Worcestershire. Purton. Grass-field in the Isle of Tirey. Dr. Walker. Hook. Scot. E.) A. sometimes B.—July.

* (From *σιω, σιωω*, to shake, as agitated by waters. E.)

† (The seeds, warm and aromatic to the taste, are put into Venice treacle, as a substitute for the real *Anomum*. E.)

S. INUNDA'TUM. (Creeping: leaves submersed, capillary, many-cleft, those above water winged, three-cleft: umbels in pairs, five-flowered. E.)

Dicks. H. S.—E. Bot. 227—Fl. Dan. 89—H. Ox. ix. 5. 5—Pct. 26. 4—Pluk. 61. 3.

(Stem about a foot long, but varying from the depth of the water, weak, branched. Fruit ovate, striated. E.) The smallest of the umbelliferous plants. Linn. *Involucrum* none. *Umbellule* sometimes sessile. Woodw. (Flowers white; petals entire, acute, nearly equal. E.)

WATER HONEWORT. (*S. inundatum*. Linn. Oed. Willd. E. Bot. Hook. Purt. Grev. *Sium inundatum*. Wiggers. Roth. Sm. Eng. Fl. *Hydrocotyle inundata*. Fl. Brit. E.) In ditches, pools, and ground subject to be overflowed. Esthwaite Lake and Rusland-Moss in Furness Fells. Mr. Jackson. Salesmore, near Manchester. Mr. Robson. Near Bungay. Mr. Woodward. Sides of rivulets on Malvern Chase. Mr. Ballard. Marazion Marsh. (Occasionally about Liverpool. Dr. Bostock. In springy ground on Abberley Hills, Worcestershire, above the Hundred-house. Purton. On Gateshead Fell; in ditches near W. Boldon; and near Harton Down hill, Durham; in ditches near High Elswick, Northumberland. Mr. Winch. Anglesey. Rev. H. Davies. Braid Hill marshes, near Edinburgh, abundant. Dr. Greville. E.) B. June.

S. VERTICILLA'TUM. Leaflets all capillary, in whorled segments.

(E. Bot. 395. E.)—Lightf. 35. at p. 1096—Moris. Umb. t. 6—H. Ox. ix. 7. 10.

Leaves, each of the whorls consists of two opposite little leaves, deeply divided into hair-like segments. Umbels, rays eight to ten. Light. (Stem a foot and a half long, upright, little branched, cylindrical, scored, smooth, nearly naked. Leaves mostly from the root, winged, with many pairs of leaflets. Calyx indistinct. Petals white, heart-shaped, incurved, nearly equal. E.)

(Smith and some foreign Botanists think this plant ought to be arranged under the genus *Sium*. E.)

WHORLED HONEWORT. Meadows and pastures. On the western side of Wales, and in Scotland. (Near Ramsay, Isle of Man, Rev. H. Davies; who first added it to the British Flora. Near Lane bridge, Killarney. Mr. J. T. Mackay. Eng. Fl. By the shores of the Gare Loch. Mr. Winch. E.)

ŒNANTHE.* Florets of different shapes, those in the centre sessile, barren: Fruit with a suberose coat, oblong, striated: crowned by the permanent styles and calyx.

O. FISTULOSA. Stoloniferous: stem-leaves winged, filiform, hollow: (general involucre often wanting. E.)

(E. Bot. 363. E.)—Kniph. 5—Riv. Pent. 36. Œnanthe—Fl. Dan. 846—Lob. Ic. i. 73. 1. 2—Ger. Em. 1060—Park. 1233. 1—Pet. 25. 5—J. B. iii. 2. 192—Ger. 902. 5.

* (In Theophrastus and Dioscorides, interpreted to mean "the flower of the vine;" derived from *οἴνος*, the vine, and *ἄνθος*, a flower: applied by Tournefort to the present genus from a fancied resemblance to the flower of the vine, and blossoming about the same period. E.)

(*Root* tuberous. *Stems* upright, rising two or three feet above the water, cylindrical, hollow as if inflated, striated, smooth, glaucous. *Involucrum* either none, or of one of five leaves. *Umbel* spokes from two to seven. The first umbel is cloven into three parts; the succeeding ones into many; so that the plant changes its appearance considerably in the course of the summer. *Petals* white (or pinkish; segments of the *calyx* minute; *seed* ovate-truncate. E.)

COMMON WATER-DROPWORT. (Welsh: *Dibynlor pibellaid*. E.) Ponds and ditches, frequent.

P. May—Aug.*

O. CROCATTA. (Leaflets all wedge-shaped, many-cleft, nearly equal. E.)

(*Hook. Fl. Lond.* 201—*E. Bot.* 2313. E.)—*Phil. Tr. Abr.* x. 23, at p. 772—*Blackw.* 575—*Gent. Mag.* 1747. xvii. p. 322—*Jacq. Hort.* iii. 55—*Woodv.* 267—*Pet.* 25. 7—*H. Oz. ix.* 7, row 2. 2—*Lob. Adv.* 326. 2—*Ik.* i. 730. 2—*Ger. Em.* 1059. 4—*Park.* 894. 6—*J. B.* iii. 2. 193. 2.

(*Root* of many fleshy knobs, abounding with an orange-coloured, fetid, very poisonous juice, such as exudes less plentifully from all parts of the herb, when wounded. *Stem* two to five feet high, much branched, somewhat forked, leafy, cylindrical, furrowed, hollow. *Leaves* dark shining green. Sm. Distinguished by the broad leaflets even in the very uppermost leaves. *Umbel* rather large. *Hook.* E.) *Leaves*, some winged; but more doubly winged. The little leaves wedge-shaped, smooth, streaked, jagged. *Petals* white, acute, incurved. *Involucrum* wanting. *Linn.* It has an *involucrum* of five strap-shaped leaflets, about half the length of the shorter spokes, but it very readily falls off. *Gough.* *Stem* and *leaves* quite devoid of hairs. *Umbellules* nearly globular. *General blossom* not very unequal.

(*Prof. Hooker* suspects that a remarkable variety, if not a new species, may be occasionally observed in the neighbourhood of Plymouth, yielding merely a watery fluid, instead of a fetid yellow juice. We beg to remark, on the authority of *Miller*, that in the ordinary state of *O. crocata*, "the juice is at first like milk, and turns afterwards to a saffron colour." E.)

HEMLOCK WATER-DROPWORT. *DEAD TONGUE. (Irish: *Dahou ban*. Welsh: *Dibynlor cegididd*; *Gysplys*. E.) Watery places, banks of rivers and ditches. Meadows, near Hanley Hall, Worcestershire. Mr. Ballard. Between Bishop's Auckland and Wolsingham, and near Stockton, Durham. Mr. Robson. Bent Bogs, near Manchester race ground. Mr. Caley. (Occasionally about Liverpool. Dr. Bostock. By the sides of brooks, rivers, and ponds, common in Dorsetshire. Pulteney. In plenty near the Red House, in Battersea fields, on the Thames' bank. Salisbury. By the rivers and brooks of Cumberland. Mr. Winch. Anglesey. Welsh Bot. Riverbank near Lasswade, Edinburgh. Greville. E.)

P. June—July.†

O. PIMPINELLOIDES. Leaflets of the root-leaves wedge-shaped, cloven: those of the stem entire, strap-shaped, very long: general involucre many strap-shaped leaves. E.)

* Cows and horses refuse it; though, from experiments made on purpose, it does not appear to be in the least degree noxious to the former.

† The whole of the plant is poisonous. Many instances of its rapidly fatal effects are recorded; for which see *Phil. Tr.* ib. and vol. i. p. 856; *Gent. Mag.* July, 1747, March, 1755, and Sept. 1753. An infusion of the leaves, or three teaspoonfuls of the juice of the

Jacq. Austr. 397—(E. Bot. 347. E.)—Matth. 867—Ger. 901—Kniph. 8—
H. Ox. ix. 7. 3—J. B. iii. 2. 191. 1—Pef. 2. 25. 8.

(Root of fleshy tubercles intermixed with fibres. Stem angular, hollow, one to two feet high. E.) Root-leaves like those of parsley, but thicker, doubly winged, broad. Leaflets lacinated. Stem-leaves less compound, scarcely double winged; leaflets strap-shaped, channelled, very long. Umbels unequal. Involucrum general and partial, all setaceous. Blossoms white, (or pinky. E.) somewhat radiated. Linn. Outer rays very long, and the florets barren. Woodw. Calyx teeth unequal. Styles upright. (Umbellules thickly crowded, forming almost spherical heads when in fruit. Hook. E.)

PARSLEY WATER-DROPWORT. (Welsh: *Dilynlwr perlllys ddail*. E.) Slow streams, ponds, and ditches. Marshes, near Yarmouth. Mr. Woodward. North side of Bredon Hill, Worcestershire. Nash. (Occasionally in ponds about Liverpool. Mr. Shepherd. In the lane, and in the copse adjoining, going from Sturminster Marshal field to Lytchet; about Weymouth, and Poole. Pulteney. On the Salt marsh on the Wear, near Southwick; near Hartlepool, Durham. Mr. Winch. Cemlyn bay, Anglesey. Welsh Bot. Banks of the Clyde at Bowling bay, with *A. fistulosa*; and below Dumbarton. Hopkirk, in Hook. Scot.

The stations of Yarmouth, Cley, Shoreham, &c. named by Ray for *Peucedanum officinale*, are now generally allowed to belong to this plant. This rare species was first ascertained to be common about Cambridge and Wisbeach by the Rev. R. Relhan, by whom it was shown to Mr. Hemsted and also communicated to Sir J. E. Smith. E.) P. July—Aug.

(O. PEUCEDANIFO/LIA. All the leaflets strap-shaped: general involucre none: knobs of the roots egg-shaped, sessile.

Pollich. 1. 889. t. 3—E. Bot. 348.

Root crowded with fleshy knobs. Stem stronger and thicker than that of the preceding species, upright, slightly angular, striated, leafy, but little branched. Root-leaves doubly winged; those of the stem winged, all the

root taken every morning, effected a cure in a very obstinate cutaneous disease; but not without occasioning very alarming disturbance in the constitution. Phil. Tr. lxii. p. 469. Mr. Gough informs me, that the country people of Westmoreland apply a poultice of the herb to the ulcer which forms in the fore part of the cleft of the hoof in horned cattle, called the foul.—Sheep eat it. Cows and horses refuse it. (Four spoonfuls of the juice of this root are recorded by Mr. Watson, in 1758, to have occasioned the death of a person at Havant, in Hampshire. Dr. Pulteney observes that in this instance, as in some others which have fallen under his own observation, all the sufferers were affected with locked jaws. Pulteney v. 2. p. 309. It has proved fatal to brood mares. Sir T. Frankland. According to Ehret, the botanical draughtsman, the mere scent of this herb occasions vertigo. In some parts of France it is said to be employed to destroy moles. This is the "*Five-angled Root*" prevalent in Pembrokeshire, and there used in cataplasms for the worst kind of whitlow. To counteract its deleterious effects on the human constitution, a quick emetic (as flour of mustard in warm water,) and venesection, are most effectual. To prevent its being mistaken for either Celery or Parsley, (both of which it resembles), delineations of each in immediate contrast are given pl. cccxlii. Encyc. Brit. It has been advantageously prescribed in Edinburgh in inveterate stercoratic complaints; and the late Dr. Hope thought that in many cases an infusion of the leaves proved an useful emmenagogue. Some writers conjecture that the poison with which the Athenians took away the lives of malefactors was an inspissated juice compounded of this and other corrosive herbs. E.)

leaflets strap-shaped, sharp-pointed. *Umbels* with stronger and less numerous spokes than in *O. pimpinelloides*. *Umbellules* many-flowered, level, *flowers* often red about the centre, white towards the circumference. *Partial involucre* many-leaved. *Calyx* rather upright, very irregular. Fl. Brit.

Upon the authority of Pollich, Smith, and Afzelius, we detach this plant from the varieties of *O. fistulosa*, with which it has long been confounded. The Author observes, "the plants I gathered in the Isle of Wight, correspond with the figure of Pollich, and the leaflets are three or four inches long, but *O. fistulosa* has leaflets rarely more than half or three fourths of an inch in length. The bulbs of the roots seem to differ in situation as the plant grows in more or less water, in a thin or stiff mud, or in a garden soil; so that their being placed in a bundle at the bottom of the stem, or on the fibres of the roots at a greater or less distance, are circumstances too variable to establish a character."

SULPHUR-WORT. WATER-DROPWORT. In fresh-water ditches and bogs. Granchester meadow, Cambridgeshire. Rev. R. Relhan. Near Bury. Mr. Mathew. About Bedford. Rev. Dr. Abbot. Bog near Portenscale, Cumberland. By the shores of Wear, at Southwick, Durham. Mr. Winch. Near Freshwater Gate, in the Isle of Wight. In a gorsy field by Small Heath House, near Birmingham. E.) P. May—June.

(**O. PHELLANDRIUM.** Leaflets all uniform, with narrow, wedge-shaped, cut, divaricated segments. Fruit ovate, with five broad ribs, and narrow intermediate furrows. Sm. E.)

(*E. Bot.* 684—*Fl. Dan.* 1154. E.)—*Riv. Pent.* 65. *Phellandr.*—*Woodv.* 266—*Blackw.* 570—*Dod.* 591—*Iob. Obs.* 424. 1, and *Ic.* i. 735. 1—*Ger. Em.* 1063—*Park.* 933. 6—*Pet.* 28. 4—*H. Ox.* ix. 7—*row* 1. 7—*Ger.* 905.

(*Root* fusiform, thick, with whorls of fibres. *Stem* hollow, bending, branched, leafy, wide apart, furrowed. *Leaves* spreading very wide, triply winged, lacinated. The *outer florets* larger, and irregular. *Calyx* five-leaved. Fl. Brit. E.) *Leaves* under the surface of the water long and hair-like. *Woodw.* *Stem* very thick, two or three feet high. *Petals* white.

(**FINE-LEAVED WATER-DROPWORT. HORSEBANE.** Irish: *Fealla bog.* E.) (*O. Phellandrium.* Spreng. Delana. Sm. Eng. Fl. *O. aquatica.* Lam. *Phellandrium aquaticum.* Linn. Lightf. Huds. With. Sm. Fl. Brit. Hook. Grev. Purt. Willd. Bull. *Ligusticum Phellandrium.* Crantz. Roth. "The genus *Phellandrium*," observes Professor Hooker, "scarcely differs from *Cenanthe* but in the want of a general involucre; a very unnatural character." E.) Rivers, ditches, and pools. Clifton, near Severn Stoke, Worcestershire. Mr. Ballard. Ditches near Darlington. Mr. Robson. In a pit at the farm yard three miles on the Stretford road from Manchester. Mr. Caley. (In an old gravel pit full of water at Eden-way, Warwickshire. Purton. Ditches near Corstorphine Hill, Edinburgh. Greville. Canal near Dublin. E. Murphy, Esq. E.) B. June—July.*

* The seeds are recommended in intermittents, and are said to be diuretic, antiseptic, and expectorant. Dose from one to three drams daily. Dr. Lange. The leaves are sometimes added to discutient cataplasms. It is generally esteemed a fatal poison to horses, occasioning them to become paralytic; but this effect is by some attributed to an insect, (*Curculio (Lixus) paraplecticus*) which inhabits within the stems. The usual antidote is

Var. 2. Fine-leaved.

Grows in running streams. The leaves are divided like those of *Ranunculus aquatilis* in the same situations. Sometimes, though rarely, when the plant grows in an angle out of the rapid course of the stream, it produces flowers. Relhan. Ray mentions having observed it between Woodstock and Bjenheim, near the bridge.

CICUTA.* Flowers uniform, all fertile: Fruit nearly ovate, ribbed.

C. VIROSA. Umbels opposite the leaves: leaf-stalks bordered, blunt: (leaves twice ternate. E.)

(E. Bot. 479. E.)—Phil. Tr. Abr. x. 23. at p. 772—Woodv. 268—Fl. Dan. 208—Blackw. 574. a, b, c.—Gunn. 2—Riv. Pent. 77. *Cicutaria*—Dod. 589. 3—Lob. Obs. 105. 2, and Ic. i. 208. 2—Ger. Em. 256. 4—Park. 1241. 3—J. B. iii. 2. 175. 2—Pet. 28. 1—H. Ox. ix. 5. 4.

(Root tuberos, hollow, with whorled fibres, and transverse partitions. Leaflets one to two inches long, remarkably decurrent. Stem three or four feet high, reddish towards the bottom, branched, furrowed, leafy, hollow. E.) Leaves, serratures sometimes brown. Fruit-stalks sheathed at the base by the leaf-stalks. Receptacles of the spokes reddish. Leaves bright green, with about seven pairs of little leaves, which are variously divided and indented. Petals yellowish green, (or white, small, much inflexed. Styles wide apart in the fruit. E.)

WATER COWBANE. LONG-LEAVED WATER HEMLOCK. Sides of pools and rivers. Pond two miles from Northwich on the side of the road to Chester. Mr. Wood. Near Norwich. Mr. Pitchford. Near Yarmouth. Mr. Woodward. Kingston pool, near Stafford. Stokes. Lochs of Forfar and Restenet. Mr. Brown. Mr. Slaney's pool dam, Hatton, Shropshire. (In the Leen, near the Rock holes, in Nottingham Park. Pulteney. Ditches near Stirling. Mr. Winch. Keswick; banks of the Irthing at Walton, and Irthington. Hutchinson. Lochend; the only station, near Edinburgh. Greville. E.) P. July—Aug.†

pig dung. In the winter the roots and stem, dissected by the influence of the weather, present a very curious skeleton or net work. Horses, sheep, and goats eat it. Swine are not fond of it. Cows refuse it. *Chrysomela Phellandria*, and the *Gilt Leptura* are found upon the roots.

• (In reference to the internode or space between the joints; as in a reed or Pan's pipe. E.)

† This is one of the rankest of our vegetable poisons. (Pulteney describes it as "the most virulent of all our English productions." It has been generally considered destructive to man and beast; but goats have long been known to devour it with impunity. •

—"videre licet pinguescere sæpe *Cicuta*
Barbigeras pœnides, hœmifiquæ est acie venenum." Lucret.

Its dreadful effects are quickly manifest. Pain of the pericardia, loss of speech, and of all the senses, with terrible convulsions; the mouth so strongly closed as not to be forced open, blood from the ears, and horrible distortion of the eyes, precede the fatal catastrophe, which itself supervenes in the short space of half an hour! Whether this plant was an ingredient in the Athenian death-draught, cannot now be ascertained. In Norway its use in medicine has been prohibited. Be careful to avoid confounding this herb with the officinal *Cicuta*, (*Conium maculatum*), which does not grow in water, and has a spotted stem. E.) Numerous instances are recorded of its fatality to the human species in a treatise upon it by Wepfer, and Haller's Hist. Helv. n. 781. See also an account of its deleterious effects in Phil. Tr. Abr. x. Early in the spring, when it grows in water, cows often eat it, and are killed by it; but as the summer advances, and its scent becomes stronger, they carefully avoid it.

ÆTHU'SA.* *Flowers* somewhat radiate, all fertile: *Involucellum* extending half way round, three-leaved, deflexed: *Fruit* nearly globular, deeply furrowed.

Æ. CYNAPIUM. (Leaves uniform: leaflets wedge-shaped, decurrent, with spear-shaped segments. E.)

Curt.—*Kniph.* 12—*Riv. Pent.* 76. *Cynapium.*—(*E. Bot.* 1192. E.)—*Ger. Em.* 1061. 1—*Park.* 933. 2—*Pet.* 28. 3—*Blackw.* 517—*H. Ox.* ix. 7. n. 2. fig. 1st,

(*Root* tapering, whitish, E.) From one foot and half to two feet high, branched (striated, often purplish. E.) *Leaves* doubly winged, smooth, glossy, of dark lurid green. *Leaflets* divided into three segments, which are again subdivided into three or five. *Umbel* spokes often eighteen or more. *Involucellum* three very long and slender leaflets. *Flowers* whitish. * (*Plant* strong smelling. The few long pendulous *bracteas*, under each partial *umbel*, distinguish it from all its tribe. Sm. E.)

FOOL'S PARSLEY OR CICELY. LESSER HEMLOCK. (Welsh: *Gauberllys*. E.) Corn-fields and kitchen gardens. A. Aug.—Sept.†

CORIANDRUM.‡ *Blossom* radiate; centre ones barren: *Petals* incurved, emarginate: *Involucrum* one leaf: *Involucel.* extending but half way round: *Fruit* globular, smooth.

C. SATIVUM. (Two hemispherical seeds, forming one globe: leaflets of the lower leaves wedge-shaped. E.)

Woodv. 181—*E. Bot.* 67—*Kniph.* 10—*Ludw.* 37—*Riv. Pent.* 70. *Coriandrum*—*Blackw.* 176—*Fuchs.* 345—*J. B.* iii. 2. 89—*Dod.* 302. 1 and 2—*Lob. Obs.* 403, and *Ic.* i. 705. 2—*Ger. Em.* 1012. 1 and 2—*Park.* 918 and 2—*Ger.* 859—*Matth.* 763—*Trag.* 115—*Lon.* 79.

Whole *plant* smooth, (twelve to eighteen inches high. E.) *Leaves* cut into very slender strap-shaped segments. *Proper calyx* five leaves, permanent, more distinctly formed than is usual in umbelliferous plants. *Styles* permanent, reflexed. *Outer* florets of the umbellules barren; petals larger, radiate, expanding; *central* florets fertile, petals equal, incurved. *Flowers* white, sometimes tinged with red.

* (From *αἰθερ*, to make warm, as does the pungency of the plant. E.)

† This plant, from its resemblance to common Parsley, has sometimes been mistaken for it, and when eaten it occasions sickness. (Baron Haller does not hesitate to attribute to it qualities absolutely poisonous, a report confirmed by Dr. Lempriere, who states that it "causes vomiting, intoxication or delirium, numbness of the extremities, and often death." *Lect.* p. 225. We cannot be too particular in discriminating these deleterious herbs, especially as they may be found growing intermixed with culinary vegetables. The leaves of common Garden Parsley are yellowish green, those of Fool's Parsley very dark green, and much more finely divided; the former when bruised gives out a strong and peculiar odour; the latter has very little smell. Fool's Parsley may be distinguished from Hemlock not only by its being in every respect smaller, but by its wanting the strong disagreeable scent, and the spotted stem of Hemlock. (*Con. mac.*) E.) If the curled-leaved Parsley only was cultivated in gardens, no such mistakes could happen. Cows, horses, sheep, goats, and swine eat it. It is noxious to geese.

‡ (From *κορίς*, a bug; the leaves when bruised smelling like that insect. E.)

COMMON CORIANDER. Corn-fields, road sides, and on dunghills.

A. June—July.*

SCANDIX.† Bloss. radiated: central florets frequently barren: Petals emarginate: Styles permanent: Fruit awl-shaped.

S. PECTEN. (Stem rough: E.) seeds with a very long beak: leaflets with many fine divisions.

Jacq. Austr. 263—Curt. 249—(E. Bot. 1397. E.)—Fl. Dan. 844—Riv. Pent. 38. Scandix—Dod. 701. 2—Lob. Obs. 419. 2, and Ic. 726. 2—Ger. Em. 1040. 1—Park. 916. 1—J. B. iii. 6. 71. 2—H. Ox. ix. 11, row 2. 1—Matth. 527—Ger. 884.

From eight to eighteen inches high. Involucrum none. Umbel of two or three spokes. Involucellum leaflets cloven. Umbellules of seven or eight florets. Fruit finely serrated at the edges. (Beak more than an inch long, angular, scabrous. E.) The glandular receptacle crowning the germen of a fine purple. By carefully dividing the germen after it has shot out an inch or more in length, a tube continued from the styles down to the seeds may be discovered. Petals white, acute, inflexed. (Stems rather spreading. Leaves triply winged; leaflets with many divisions; segments alternate, strap-shaped, nearly smooth. E.)

COMMON SHEPHERD'S NEEDLE. VENUS'S COMB. (BEGGAR'S NEEDLE. CROW NEEDLES. Welsh: Creithig Nodwydd y bugail. S. Pecten—Veneris. Linn. Curt. Sm. Hook. Willd. &c. S. Pecten. With. Grev. Corn-fields.) A. June—July.‡

(ANTHRISCUS. Beak shorter than the seeds, glabrous: Fruit ovate, hispid: Cal. none: Pet. equal, inversely heart-shaped: Fl. recept. slightly bordered. E.)

(A. VULGARIS. Fruit ovate, twice the length of the beak: leaves triply pinnate, pinnatifid. E.)

Curt.—Jacq. Austr. 154—(E. Bot. 818. E.)—Riv. Pent. 35. Cauc. fol. Cerefol.—Fl. Dan. 863—Pet. 27. 12—H. Ox. ix. 10. row 1. 2—J. B. iii. l. 182. 1.

Leaves pale green, triply winged, segments wing-cleft, crowded with white, stiff, upright hairs. Stem, (about two feet high, swollen beneath each joint, E.) branches and fruit-stalk quite smooth; sheaths of the leaves

* The leaves have a very strong and disagreeable scent. The seeds are grateful to the taste, and, incrustated with sugar, are sold by the confectioners under the name of Coriander Comfits. The Edinburgh College use them as correctors in the Bitter Infusion and the preparations of Senna, nothing so effectually covering the unpleasant taste of that medicine. They have been considered as suspicious, if not deleterious, but I have known six drams of them taken at once without any remarkable effect. (The plant is cultivated on the stiff lands in Essex. The seeds are employed by rectifiers of spirits for cordial drinks; Salisbury: and by brewers both in England and Holland, to flavour their strongest beer. In some countries the leaves are used in soups and salads. E.)

† (An ancient Latin name; scandix of the Greeks, derived by De Theis from *scandis* to prick; alluding to the needle points of the seeds, as exemplified in *Shepherd's Needle*. E.)

‡ (A troublesome weed in barley-crops; no dressing can separate the seeds. They are seldom seen in samples of wheat, being a little too short of growth. Holdich. E.)

remarkably woolly. *Involucrum* none. *Involucellum* of four or five leaflets. *Umbels* either sessile, or on fruit-stalks: (chiefly lateral, E.) spokes five or six. *Umbellules*, spokes five to seven. *Flowers* almost all fertile. *Petals* white, small. (*Fruit* rough with hooked bristles; *beak* bifid. E.)

(COMMON BEAKED PARSLEY. ROUGH CHERVIL: (though as a corruption of the following generic Greek compound no longer applicable here.) Welsh: *Creitheg gwry-chog*. *A. vulgaris*. Pers. Spreng. Hoffm. Hook. Sm. Grev. *Scandix Anthriscus*. Linn. With. Ed. 6. Willd. Curt. Fl. Brit. *Caucalis scandinavica*. With. Ed. 4. Wigg. Æder. E.) Amongst rubbish, and on road sides. (At the foot of the wall at Oversley Bridge. Purton.) A. May—June.*

CHÆROPHYLLUM.† *Involucellum* reflexed, concave: *Petals* heart-shaped, incurved: *Fruit* shining, (not striated,) smooth, oblong.

(C. SATIVUM. Seeds glossy, cylindrical, beaked: umbels lateral, nearly sessile: (bractæas lanceolate. E.)

Jacq. Austr. 390—(E. Bot. 1268. E.)—Fuchs. 216—J. B. iii. 2. 75—Dod. 700. 2—Trag. 471—Riv. Pent. t. 43—Ger. Em. 1038. 1—Matth. 526—Ger. 882. 1—H. Ox. ix. 11. row 1. 1—Lonic. i. 238—Blackw. 236.

Leaves of an exceedingly delicate texture. *Umbels* sometimes from the forks of the stem; often on fruit-stalks from a line to an inch in length. *Spokes* woolly, generally four, but sometimes three and five; those of the umbellules ten and twelve. *Involucrum* leaf, strap-shaped. *Blossom* white. St. (*Stem* one foot or one foot and a half high, striated. E.)

COMMON CHERVIL. (*C. sativum*. Bauh. Gärtn. Spreng. Hook. Sm. *Scandix Cerefolium*. Linn. With. Willd. E. Bot. E.) Near Worcester, in considerable plenty in the hedge of the south-east side of the Bristol road, just beyond the turnpike. And in the hedges in Upper and Lower Old Swinford. Stokes. (On a bank near Halesworth, Suffolk. Mr. D. Turner. Goldington road side, Bedfordshire. Abbot. Lanes near Bageley, by Stockport. Mr. G. Holme, in Bot. Guide. Ballast Hills, Sunderland. Mr. Winch. E.) A. May.‡

C. SYLVES'TRE. Stem nearly smooth, striated, a little swollen at the joints: (umbels terminal, stalked: bractæas ovate, membranous. Sm. E.)

Curt. 273—Jacq. Austr. 149—(E. Bot. 752. E.) H. Ox. ix. 11. 5—Fuchs. 525—Riv. Pent. 44. *Cerefol. sylv.*—Pet. 25. 2—Lonic. i. 238.

* (Miller tells us there have been some instances of serious ill effects from this plant, when taken in soups by mistake. Curtis observes that when particularly luxuriant, as in moist situations, it affects somewhat the appearance of Hemlock, (*Con. mac.*) but may be distinguished by the following particulars. Hemlock leaves are smooth; these have a slight hairiness, are more finely divided, and of a paler green: Hemlock stalk is spotted; this is not; Hemlock has a general involucrum, which in this plant is wanting; Hemlock seeds are smooth, these are rough; nor has this the strong disagreeable smell of Hemlock, but more resembles that of Common Chervil. E.)

† (From χαίρω, to rejoice or exult, and φύλλον, a leaf; in reference to its exuberant foliage. E.)

‡ (It is cultivated in gardens as a potherb, and, (as father Gerard has it, "the seedes eaten as a sallade whilst they are yet greene, with oile, vinegar, and pepper, exceede all other sallades by many degrees, both in pleasantnes of taste, sweetness of smell, and holomoness for the cold and feeble stomache. The rootes are likewise most excellent in a sallade, if they be boiled, and after dressed, as the cunning cooke knoweth how better than my selfe.") E.)

(Root spindle-shaped, branched, milky. Stem nearly three feet high. Petals sometimes notched, sometimes entire. Fl. Brit. E.) Stem woolly, particularly downwards. Central florets of the umbellules often barren. St. Flowers white. Styles permanent, (their bases almost globular. E.)

WILD OR SMOOTH CHERVIL. COW PARSLEY. (Welsh: *Gorthyfail llyfn*. E.) Hedges, orchards, and pastures. P. May—June.*

(MYRRHIS. Fruit deeply furrowed: Cal. none: Pet. inversely heart-shaped, rather unequal: Fl. recept. none: Flowers imperfectly separated. Sm. E.)

M. TEMULENTA. Stem spotted, joints swollen: stem and leaves rough: leaflets cut, acute: (seeds furrowed, smooth. E.)

Fl. Dan. 918—Jacq. Aust. 65—(E. Bot. 1521. E.)—Riv. Pent. 49. Myrrhis. —Ger. 867—Ger. Em. 1038. 2—Park. 915—Pet. 25. 3—H. Ox. ix. 10. 7—J. B. iii. 2. 70. 2 and 1.

From half to one yard high. Involucrum none, or from one to four leaves. Involucellum one leaf, with six or eight clefts. Flowers very white; petals cloven. Relh. Umbellules in the centre barren. (Whilst immature, the umbels continue drooping or nodding; “*Virgines dormientes*.” E.)

(ROUGH CICELY. (Welsh: *Gorthyfail gaw*. M. temula. Spreng. M. temulenta. Sm. Chaerophyllum temulum (temulentum). Linn. With. Willd. Curt. Hook. Grev. Fl. Brit. E.) In hedges, common.

(B. E.) July—Aug.†

(M. AU'REA. Stem somewhat swollen, angular, more or less hairy: leaflets pinnatifid, acute, cut: seeds coloured, ribbed: (general bractees few; partial deflexed. E.)

Jacq. Austr. v. 1. t. 64—E. Bot. 2103.

Distinguished from every other British species by the leaflets, especially in the upper leaves, being peculiarly attenuated. Hook. Stem three feet high, branched, solid, angular, striated, slightly tumid below each joint, clothed more or less with short, soft, deflexed hairs, among which a few short bristles are occasionally interspersed. The common leaf-stalk surrounds the stem by a ring at its base, but its edges upwards are linear and but little dilated. * The leaves and leaflets have sharp and rather elongated points, and are acutely pinnatifid and roughish. Umbels flattish, cream-coloured, often having the rudiments of a general involucre. Seeds, when young, rather tumid upwards; as they ripen, more spear-shaped, tawny or yellowish, with three broad, smooth ribs at each side, and crowned with the divaricated styles.

* The roots eaten as parsneps have been found poisonous. The umbels afford an indifferent yellow dye; the leaves and stems a beautiful green. Its presence indicates a fruitful soil. Neither horses, sheep, nor goats are fond of it. Cows and swine refuse it. Linn. It is grateful to cows and rabbits. In some parts of the kingdom, in times of scarcity, it is used as a potherb. Curt. Cows are so fond of it, that when a pasture is over-run with it, as is often the case about Dudley, they are always turned in to eat it up. Mr. Wainwright. (Other writers advise its extirpation from pastures, as at least a cumbersome intruder, only fit food for asses. The leaves are recommended by Geoffroy as aperient and diuretic. The under sides of the leaves frequently exhibit the little fungus *Puccinia Cherophylli*, scattered thickly in small round dots, of a brown colour. E.)

† (The whole plant is sweetish, and aromatic, acceptable to cattle. Sm. Having a spotted stalk it is sometimes substituted for Hemlock, and the Extract is also sold for that of *Con. mac*. Gray. E.)

TAWNY-SEEDED CICELY. *M. aurea*. Spreng. Sm. Grev. *Chaerophyllum aureum*. Linn. With. Jacq. Hook. This very rare plant was discovered by Mr. G. Don on the borders of fields, between Arbroath and Montrose, and at Corstorphine near Edinburgh. E. Bot. Not to be found in the latter station. Greville. P. June. E.)

(**M. AROMATICA.** Seeds ribbed, smooth: styles elongated: leaflets ovate, acute serrated, undivided.

Riv. Pent. t. 53—Jacq. Austr. t. 150.

Herb when bruised somewhat aromatic. Sm. Two or three feet high, slightly pubescent below, smooth above. **Leaves** bi-ternate; leaflets large, undivided, or rarely with a small lobe near the base, pubescent beneath. Has sometimes a small general involucre. Hook.

AROMATIC OF BROAD-LEAVED CICELY. *M. aromatica*. Spreng. Sm. *Chaerophyllum aromaticum*. Linn. Willd. Jacq. Don. Hook. Near Guthrie, by the road side leading from Forfar to Arbroath. Mr. G. Don. P. June. E.)

(**M. ODORATA.** Seeds very large, with sharp, prominent angles: leaves large, villous, very compound. E.)

Jacq. Austr. App. 37—(E. Bot. 697. E.)—Kniph. 4—Riv. Pent. 57. Odorata—H. Oz. ix. 10. 1—Dod. 701. 1—Lob. Obs. 423. 2. and Ic. i. 734. 1—Ger. Em. 1039. 3—Park. 935. 1—Ger. 882. 2—Blackw. 243.

Leaves treble winged; **little-leaves** with wing clefts. **Segments** deeply and sharply serrated. **Seeds** longer than the umbellules. Woodw. (**Stem** nearly two feet high, striated, leafy, robust. **Umbels** on fruit-stalks, both lateral and terminal. **Bloss.** white. **Central florets** containing only stamens. **Root** fleshy, sweet. **Fruit** an inch long: whole plant aromatic. E.)

SWEET CICELY. SWEET FERN. (Welsh: *Crcithig*; *Sisly bér*. *M. odorata*. Scop. Hoffm. Sm. Grev. *Scandix odorata*. Linn. With. Lightf. Jacq. Willd. Fl. Brit. *Chaerophyllum odoratum*. Hook. E.) **Orchards**, waste places, and hedges. Banks of the Derwent above Chatsworth. Mr. Whately. Common near Leeds, and certainly wild. Mr. Wood. In an orchard at the top of Souston's Roche, near Shelsley Wash, Worcestershire. Mr. Ballard. Llangollen Monastery, Denbighshire; and White Ladies near Boscobel, Shropshire. Rev. S. Dickenson. Tixall, near Stafford. (At Studley Castle, and Balsal Temple, Warwickshire. Purton Woods at Plasnewydd, Anglesey. Welsh Bot. Arniston woods, near Edinburgh. Mr. Arnott. Caroline Park, do. Greville. Hook. Scot. In meadows between Morton and Rushworth, certainly a native. Dr. Richardson; and upon the sides of brooks near Glusburn, in Craven, Yorkshire. Hailstone in Whitaker. In every wood on the Team, undoubtedly wild; frequent in Weardale, Durham. Mr. Winch. Frequent in Yorkshire; and Mr. Brunton, in Bot. Guide, observes that it is the most common umbellate vegetable in Wansley-Dale, and not found near houses, but by the sides of rivulets. P. May. E.)—June.*

IMPERATORIA.† *Petals* incurved, emarginate: *Seed* com-

* The seeds have the flavour of Anise, and are used in the north of England for pollishing and perfuming oak floors and furniture. Mr. Woodward. (In Italy it is considered an useful vegetable; and the green seeds, ground small, prove an agreeable addition to cold salads. Salisbury. E.)

† (From *imperium*, empire; said to allude to its foliage extending so as to master other plants; but is not a meaning more likely to be found in its powerful qualities and supposed antidotal efficacy? E.)

pressed, with a broad, membranous border, and three ridges on the back.

I. OSTRU' THIUM. (Leaves bi-ternate, serrated. E.)

(*E. Bot.* 1380. E.)—*Woodv.* 35—*Riv. Pent.* 7. *Imperatoria*.—*Fuchs.* 763—*J. B.* iii. 2. 137—*Blackw.* 279—*Park.* 942—*Trag.* 433—*Matth.* 775—*Ionic.* i. 228. 2—*Clus.* ii. 194. 2—*Dod.* 320. 1—*Lob. Obs.* 398. 1, and *Ic.* 700. 1—*Ger. Em.* 1001. 1—*H. Ox.* ix. 4. row 1. 1—*Garid.* 55.

(*Root* tuberous, acrid, thick as a man's thumb. *Stem* upright, a foot and a half high, undivided, striated, smooth. *Leaves* double-three-fold, smooth, sharply serrated and lacinate. *Umbels* terminal, few, level. *Umbellules* many-flowered. *Involucellum* a few bristle-like leaflets. *Flowers* white or reddish, regular. *Fl. Brit.* E.)

MASTERWORT. Found by Lightfoot on the banks of the Clyde, particularly about Arden Caple. Isle of Bute, near Mount Stewart. Near Bridgnorth, but in a situation that would allow of its being an outcast of a garden. (At Newbiggen near Middleton, and in Teesdale Forest. Rev. J. Harriman. Banks of Dardree Burn, between Dardree Shield and the Wear. Mr. Winch. Cotterston, near Barnard Castle. Mr. Robson. In a meadow immediately after crossing the lane on the moors between Brough and Middleton, certainly wild. Mr. Brunton. Banks of the Tweed, near the old castle of Drummelzier. E.) P. June.*

PASTINACA.† *Petals* rolled inwards, entire: *Seeds* elliptical, compressed, leaf-like, smooth, border thin, narrow.

P. SATIVA. *Leaves* simply winged, (downy underneath. E.)

Var. 1. Wild.

(*E. Bot.* 556. E.)—*Kniph.* 6—*Riv. Pent.* 6. *Pastinaca*.—*Fuchs.* 753—*J. B.* iii. 2. 149—*H. Ox.* ix. 16. 2—*Matth.* 776—*Ger.* 856.

(*Root* spindle-shaped, white, aromatic, mucilaginous and sweet, with a degree of acrimony, which it loses by cultivation. *Sm.* E.) *Stem* three or four feet high, membranous at the angles. *Involucrum* none. *Umbel* spokes six to twelve. *Involucellum* sometimes of one leaf. *Umbellules* spokes short, numerous. *Flowers* yellow, (small, some of the innermost not unfrequently abortive. *Sm.* *Fruit* large. E.)

WILD PARSNIP. (Irish: *Cuirridin ban.* E.) Borders of ploughed fields, in limestone: and marl. Stokes. (On chalky soil in Norfolk and Suffolk Mr. Woodward. E.) Frequent in Gloucestershire.

B. June—July.

Var. 2. *Leaves* broader.

Fuchs. 751—*Dod.* 680. 2—*Ger. Em.* 1025—*J. B.* iii. 2. 150—*Ger.* 870. 2—*Matth.* 747—*Ger.* 870. 1—*Dod.* 680. 1—*Lob. Obs.* 407. 2, and *Ic.* i. 709. 2—*Ger. Em.* 1025. 1—*Park.* 944.

* Root warm and aromatic; a sudorific, diuretic, and sialagogue; recommended in dropsy, debilities of the stomach and bowels; and an infusion of it in wine is said to have cured quartans that have resisted the bark. Dr. Stokes. When chewed, it excites a copious flow of saliva, occasioning a warm and not disagreeable sensation in the gums, and frequently curing the rheumatic tooth-ache. (It is cultivated for the sake of the root, which should be gathered in winter, and strongly infused in wine. E.)

† (Probably derived from *pastus*, proper to feed upon: "*pastae radices.*" E.)

GARDEN PARSNEP. Retzius remarks that the cultivated garden Parsnep has wing-cleft leaflets, furnished with ear-like appendages, and that it is either hairy or smooth.*

SMYRNIUM.† *Petals* keeled, acuminate : *Fruit* egg-globular, gibbous, angular with ribs, (flattened. E.)

S. OLUSA' TRUM. Stem-leaves ternate, on leaf-stalks : serrated.

Dicks. H. S.—E. Bot. 230—*Ger.* 864. 2—*Trag.* 436—*Lonic.* i. 237. 2—*Blackw.* 408—*J. B.* iii. 2. 126—*Dod.* 698. 1—*Lob.* i. 708. 2—*Ger. Em.* 1019—*Park.* 1930. 1—*Pet.* 24. 1—*H. Ox.* ix. 4, row 2. n. 1. fig. 3d.

Root-leaves thrice ternate, *stem-leaves* ternate ; the upper ones opposite, three on a leaf-stalk. *Sheaths* of the leaves ragged and fringed. *Involu-cellum* very short. Central florets barren. *Linn.* Whole plant small, smooth, pale green, often of a sickly yellowish cast. *Flowers* greenish yellow. (*Stems* three or four feet high. *Umbels* large, globose, strong, many-rayed. *Fruit* nearly black, large. *Plant* rather succulent. E.)

ALEXANDERS. (Irish : *Alistrin.* Welsh : *Dulys cyffredin.* E.) Ditches and rocks on the sea-coast. About Scarborough and Nottingham Castles ; Deptford, Battersea, and Vauxhall : (Sea-shore below the old castle of Ravensheugh, between Dysart and Kirkcaldy. Dr. Walker. Grev. Edin. Beaumaris, Aberffraw, and almost covers the south-west end of Priestholm island. Rev. Hugh Davies. E.) Bungay. Mr. Woodward. Under the walls of York. Mr. Wood. Between Great Comberton and Wollershill, under hedges near the Avon, Worcestershire. Nash Found by the Rev. Mr. Welles at Hill Croome, Worcestershire. Mr. Ballard. Very common in all the western counties, and also in the flat parts of Gloucestershire. (In the ruins of Dunstanburgh Castle, and close to the town of Newcastle, Northumberland. Mr. Winch. In ditches about Badsey, near Evesham. Purton. A principal produce of the Steep Holmes Island, in the Severn ; and worthy the attention of mariners. E.)

B. May—June.‡

* The roots when cultivated are sweeter than carrots, and are much used by those who abstain from animal food during Lent : they are highly nutritious, (and yield a considerable portion of saccharine matter. E.) In the north of Ireland they are brewed, instead of malt, with hops, and fermented with yeast. The liquor thus obtained is agreeable. The seeds contain an essential oil, and will often cure intermittent fevers. Hogs are fond of the roots, and quickly grow fat when fed on them. (As fodder for cattle during the winter season, they supply a good produce, but are somewhat troublesome to cultivate, and difficult to take out of the ground. Salisbury. In Brittany these esculent roots have been very long used, and are highly esteemed as winter food for all kinds of cattle. E.)

† (From *σμύριον*, Myrrh ; the root smelling like that aromatic. E.)

‡ It was formerly cultivated in gardens, (and has roots externally black, whence the specific name *Olusa-atrum* or *Black Potherb.* E.) but its place is now better supplied by celery. It is boiled and greedily eaten by sailors returning from long voyages, who happen to land at the south-west corner of Anglesey. Pennant. (That it was really a good thing may be safely inferred from its still being found outside old abbey walls : and since indications of the "*tempora mutantur*" are sufficiently obvious, we are almost prepared to expect that, in the course of a liberalizing age, it may resume the ascendancy, and be re-admitted to its more favoured position. E.)

(ME'UM.* *Fr.* elliptic-oblong, with equidistant ribs; interstices flattish: *Cal.* none: *Pet.* obovate, with an inflexed point, equal: *Styles* tumid at the base, short, recurved: *Fl. recept.* none: *Fl.* united, all perfect, regular. Sm. E.)

(*M. ATHAMANTICUM.* Leaflets all in numerous, deep, bristle-like segments: bracteas both general and partial.† Sm. E.)

Dicks. *H. S.*—(*Hook. Fl. Lond.* 182—*E. Bot.* 2249. E.)—*Ludw.* 66—*Jacq. Austr.* 303—*Riv. Pent.* 63. *Meum.*—*Clus.* ii. 198. 2—*Dod.* 305—*Lob. Obs.* 449. 2, and *Id.* i. 777. 1—*Ger. Em.* 1052. 1—*Park.* 888. 1—*H. Ox.* ix. 2, row 1, fig. 2—*Blackw.* 525—*Matth.* 24—*Ger.* 895—*Tourn.* 165—*Fuchs.* 231—*J. B.* iii. 2. 11—*Trag.* 445—*Kniph.* 4.

(*Root* woody. *Stem* one to two feet high, upright, generally undivided, naked, scored. *Flowers* white or reddish, uniform. *Calyx* seldom visible. *Petals* spear-shaped, bent inward at the points. *Fruit* rather compressed, with sharp ribs. *Fl. Brit.* E.) *Involucrum* none, or but rarely, of one leaf. *Involucellum* lateral. Linn.

SPIGNEL. MEU. SPIGNEL CICELY. (BALD-MONEY. Gaelic: *Muilcinn.* *Athamanta Meum.* Linn. *Ligusticum Meum.* Crantz. *Hook. Scot.* *Aithusa Meum.* Linn. *Syst. Veg.* With. Willd. *Meum.* Ray. *Ger. Dod.* *Matth. Camer. Riv. Sceli Meum.* Scop. *M. athamanticum.* Jacq. *Huds. Dicks. Spreng. Gärtn. Sm. Hook.* Frequent in the Highlands of Scotland. Loch Lomond, and north side of Loch Ness. Mr. Murray, in *Hook. Scot.* E.) Mountainous pastures in the northern counties. Near Dolgelle, Merionethshire. In a field by the fourth mile-stone leading from Kendal to Appleby, but not frequent in Westmoreland. Mr. Gough. In Conistone, Furness Fells. Mr. Jackson. (Near Thockerington, Northumberland; and at Bristow bank, near Keswick. Mr. Winch. E.) P. May.‡

(*M. FENICULUM.* Leaves triply pinnate: leaflets awl-shaped, drooping: bracteas none. Sm.

E. Bot. 1208. E.)—*Mill. Ill.*—*Sheldr.* 15—*Woodv.* 160—*Riv. Pent.* 61. *Fenicul.*—*Tourn.* 164—*Dod.* 297—*Lob. Obs.* 448—and *Id.* i. 775. 2—*Ger. Em.* 1032—*Park.* 884—*Blackw.* 288—*H. Ox.* ix. 2. row 1. 1—*Lonic.* 234—*Fuchs.* 501—*Trag.* 448—*J. B.* iii. 2. 3—*Ger.* 877. 1.

From three to five feet high; bluish green. *Flowers* golden yellow. (*Root* tap-shaped. *Umbels* broad, flat, with numerous angular rays. *Involucrum* and *Involucellum* entirely wanting. *Style* very short, with an egg-

* (Not the *Melox* of Dioscorides; but more probably derived from *μειον*, (*minimo*), from the extreme fineness of its leaves. E.)

† (Smith adduces the presence of *bracteas*, (*involucra* and *involucella*), as this plant, as an instance of their uncertainty for generic character. *Vid. vol. i. p. 172. E.*)

‡ Linnaeus says that the radical fibres of this plant form the basis of the *Calculus Egregiolis*, but though I have examined several of these balls, I never found it so. Mr. Gough. The roots and seeds are aromatic and acrid. They have been used as stomachics and carminatives. Sometimes they are given to cure tertians; and there is no doubt but they will often answer as well as pepper, and other acrid aromatics. (Where this herb abounds in the Highlands, the milk and butter partake of its peculiar Melilot-like taste in the spring, and a strong infusion of it gives cheese the flavour of the Swiss Chapziegar, so as hardly to be distinguished from that brought from abroad. *E. Bot.* E.)

shaped yellow base. *Stem* much branched, leafy, scored, smooth. Whole plant has a peculiarly strong aromatic odour. E.)

COMMON FENNEL. (Welsh: *Ffenigl cyffredin*. E.) Chalky cliffs. Near Marazion, Cornwall, plentiful. Mr. Watt. Nottingham Castle. Mr. Whately. Near Spetchly, Worcestershire. Dr. Stokes. Western coasts, common. (Ballast Hills at Ayre's Quay, near Sunderland. Mr. Winch. Between Borth and Llandysilio, Anglesey. Welsh Bot. Abundant on the shores of the Teign, near Bitton, and extending thence by the road side towards Newton Bushel. E.) B. July—Aug.*

CARUM.† *Involucrum* one leaf: *Petals* united, incurved, emarginate: *Fruit* small, elliptical, gibbous, roundish, striated.

C. CARUI.

(*Fl. Dan.* 1091—*E. Bot.* 1603. E.)—*Ludw.* 156—*Jacq. Austr.* 393—*Woodv.* 45—*Tourn.* 160. 3—*Blackw.* 529—*Riv. Pent.* 55. *Carum*.—*Ger.* 879—*H. Ox.* ix. 9. row 2. 1—*Pet.* 26. 1—*Dod.* 299. 2—*Lob. Obs.* 418. 1, and *Id.* i. 724. 1—*Ger. Em.* 1034—*Park.* 910.

(*Root* tapering. E.) *Plant* two to three feet high; quite smooth, (branched, furrowed. E.) *Leaves* doubly compound; *leaflets* in sixes, in a sort of whorl, two of them longer. *Involucrum* from one to five leaves. *Umbel*, spokes nine to twelve. *Florets* all fertile, (sometimes only the marginal ones so. E.) *Petals* and *styles* slightly tinged with red.

CARAWAY. (Welsh: *Carwas*; *Carddwy*. E.) Meadows, pastures, and waste places. Near Bury. Mr. Cullum. (Park-field at Thurleigh, Bedfordshire, in such quantity as to be regularly gathered for use. Rev. Dr. Abbot. On a hedge in the parish of Llandsadwrn, Anglesey, between Cefn côch and the church. Welsh Bot. Between Newhall and South Queensferry, and near the village of Abercorn. Mr. Maughan, in Grev. Edin. Under the rocks of Edinburgh Castle, towards the west. Dr. Parsons, in *Lightf.* E.) B. May—June.‡

PIMPINELLA.§ *Petals* incurved: *Styles* upright: *Summit* nearly globular: *Fruit* small, egg-oblong, with five elevated ridges.

* The tender buds are useful in salads. The leaves boiled are used in sauce for several kinds of fish, and eaten raw with pickled fish. In Italy the stalks are blanched as a winter salad. The seeds abound with an essential oil, which is carminative and diuretic, but not heating. *Papiko Machaan* feeds upon this herb.

† (From CARIA, a district of Minor Asia, from which the seeds may have been imported as an article of commerce. E.)

‡ Parkinson says, the young roots are better eating than Parsneps. The tender leaves may be boiled with potherbs, and were probably considered dainty fare in the olden time, for with some such treat did Justice Shallow entertain Falstaff;

"Nay, you shall see mine orchard, where, in an arbour, we will eat a last year's pippin of my own grafting, with a dish of *Caraways*." Shake. Hen. IV.

The seeds are used in cakes; incrustrated with sugar are called Caraway Comfits; and are distilled with spirituous liquors for the flavour they afford. They are no despicable remedy in tertian agues. They abound with an essential oil, which is antispasmodic and carminative. Sheep, goats, and swine eat the plant. Cows and horses are not fond of it. (We learn from Phil. Journ. that one pound of Caraway seeds, yielding four ounces of oil, also affords about half an ounce of Camphor. In Kent and Essex the herb is cultivated in a warm, dry soil, but is a very exhausting crop. E.)

§ (Supposed by Ambrosinus to be a corruption of *bipinella* for *bipennula*, as expressive of the feather-like structure of the foliage. E.)

P. SAXIFRAGA. Leaves winged: leaflets on the root-leaves roundish, those of the upper ones strap-shaped.

(*E. Bot.* 407. E.)

Umbels at first drooping. (*Roots* strong and woody, aromatic. *Stem* twelve to eighteen inches high, erect, cylindrical, roughish, firm, slightly branched upwards. *Umbels* terminal, flattish. *Flowers* white, small, nearly equal; *stamens* long. Grev. E.)

Var. 1. All the leaflets egg-shaped, serrated.

Tabern. Ic. 88; 255, 1 and 2 of the *Germ. Edit.*—*Ger.* 887, 1 and 2—*J. B.* iii. 2 111, 1 and 2—*H. Oz.* ix. 5. 6—*Trag.* 466—*Fuchs.* 609—*Matth.* 1032.

P. saxifraga α. *Fl. Suec.* *P. minor* β. *Fl. Lapp.* There is a wonderful diversity in the size and in the foliage of these plants. The root-leaves are winged, the leaflets egg-shaped and serrated; but the stem-leaves are many-cleft, the leaflets strap-shaped. It often happens that the root-leaves become like those on the stem, and then it has been erroneously supposed a distinct species. Linn.

Var. 2. Leaflets on the root-leaves egg-shaped, serrated, those on the stem-leaves strap-shaped, mostly entire; floral-leaves strap-shaped.

Jacq. Austr. 395—*Clus.* ii. 197. 2—*Dod.* 315. 2—*Lob. Obs.* 413. 1, and *Ic.* 719. 2—*Ger. Rm.* 1044. 2—*Park.* 947. 4—*Cam. Epit.* 776.

Var. 3. Leaflets on the root-leaves egg-shaped, serrated; on the lower stem-leaves deeply wing-cleft: floral-leaves winged.

Fl. Dan. 669—*Blackw.* 472—*Riv. Pent.* 83. *Pimpinella minor*.

P. minor α. *F. Lapp.* 106.

Var. 4. All the leaves doubly winged, leaflets strap-shaped, mostly entire; floral-leaves winged.

Specimens from the Rev. R. Relhan.

Var. 5. *Dissecta*. Root-leaves doubly winged, leaflets wing-cleft, segments entire; stem-leaves doubly winged, leaflets entire; floral-leaves cloven at the end.

Retz. iii. t. 2.

The first spring leaves the first year of its growth are simply winged, the leaflets roundish, but when these vanish it never puts forth other than such as are described above.

P. dissecta. *Retz.* (Observed on Arthur's Seat by Dr. Graham. Grev. Edin. E.)

Var. 6. All the leaves winged, leaflets wing-cleft, segments spear-shaped; floral-leaves wing-cleft.

Jacq. Austr. 397—*Gouan. Ill.* 15—*Riv. Pent.* 80. *Pimpinella*.

P. orientalis. *Gouan. Jacq.*

All the above varieties are occasioned by the different age of the plant, and the greater or lesser expansion of its foliage according to the soil in which it grows. It is probable that the first fruit leaves are the same in all, that is, simply winged, the leaflets egg-shaped and serrated. When these disappear, the lower leaves have wing-cleft, or doubly winged leaves, and the upper leaves become also more compound with the rest.

396 PENTANDRIA. DIGYNIA. PIMPINELLA.

COMMON BURNET SAXIFRAGE. SAXIFRAGE ANISE. (Welsh: *Gwraidd-riog cyffredin*. E.) Dry gravelly soil. P. Aug.—Sept.

P. MAG'NA. (Leaves winged: leaflets all egg-shaped; the terminal one three-lobed. E.)

(*E. Bot.* 408—*Fl. Dan.* 1155. E.)—*Jacq. Austr.* 396—*Dod.* 315. 1—*Lob. Obs.* 413. 2, and *Ik.* i. 720. 1—*Ger. Em.* 1044. 1—*Park.* 947. 1—*Fuchs.* 608—*J. B.* iii. 2. 109—*Chus.* ii. 197—*Barr.* 243—*H. Oz.* ix. 5, row 1. 1—*Cam. Epit.* 775—*Pet.* 26. 5—*Lonic.* 229. 2—*Moris. Umb.* 5. f. 1.

Leaflets broader than long, serrated, as if besmeared with oil, veined, of the appearance of those of *Skirrets*, (none circular, or strap-shaped, or divided into many parts.) Leaf-stalks compressed. Linn. Stem two or three feet high. Stem-leaves gradually narrower, at length strap-shaped, almost entire. Umbel, spokes fourteen. Umbellules, spokes ten to eighteen. Petals white. Relh. (Larger than the other species, especially in the leaflets. E.)

GREAT BURNET SAXIFRAGE OR ANISE. Woods and hedges in chalky or calcareous soil. Ripton Wood, Huntingdonshire. Mr. Woodward. Hollinghall Wood, Leicestershire. Dr. Arnold. About Thirsk, and Boroughbridge, Yorkshire, very common. Mr. Robson. (In the Chester Lane at High Barns, near Sunderland. Winch Guide. On the side of the road between Droitwich and Ombersley, close to Sir John Packington's Park wall. Purton. E.) P. Aug.—Sept.*

Var. 2. *Fl. ros.* Blossoms pale rose colour. Linn.

Riv. Pent. 81—*P. fl. rubro.*

In Wednesbury Field, Staffordshire.

Aug.

Var. 3. *Laciniata.* All the leaves jagged. Ray.

Pet. 26. 6—*H. Oz.* ix. 5, row 1. 3—*Moris. Umb.* 5. 1.

Hedges near Maidstone, Kent. Ray.

P. DIOICA. Plant dwarfish: umbels very numerous, (panicled: leaflets all linear: flowers dioecious. E.)

Jacq. Austr. 28—(*E. Bot.* 1209. E.)—*Chus.* ii. 200. 1—*Ger. Em.* 1054. 3—*Ger.* 863—*J. B.* iii. 2. 18. 1—*Lob. Adv.* 331. 2, and *Ik.* i. 745. 2—*Ger. Em.* 1021. 3.

Stem a hand's breadth high, wide-spreading, smooth, scored, with but few leaves. Leaves three or two-fingered, strap-shaped. Umbels, one terminal and two lateral, opposite, generally compound, some few simple. Petals long-spear-shaped, incurved, not notched. Stamens white, long. Involucrum none. Some plants with only stamens, others with stamens and pistils. Linn. Root spindle-shaped. Fertile flowers have five stamens, but the anthers are imperfect. Kuds. The barren plant has a

* This and the former species partake nearly of the same qualities. The root is very acrid, burning the mouth like pepper. (It affords a blue essential oil, and communicates that colour to water or spirit on distillation. It is an ingredient of the *Pulvis Ari compositis*. Stahl, Hoffmann, and Boerhaave recommend it as worthy attention. E.) Its acrimony hath occasioned it to be used to cure the tooth-ache, and to cleanse the skin from freckles. It is chewed to promote the secretion of saliva, and is used in gargles for dissolving viscid mucus in the throat. In Germany it is prescribed in asthma and dropsy. (Aniseeds have an aromatic smell, and a pleasant warm taste. As a stomachic Helmsont bestowed on them the appellation of "*Intestinorum Solamen*." E.) *Papilio Machaon* is found upon both species.

yellow sickly appearance. Swayne. *Flowers* yellowish or whitish. (Whole herb smooth and glaucous. Fertile plants the larger, about a foot high. Stem often purplish. E.)

EAST ANISE. (DWARF BURNET SAXIFRAGE. *P. dioica*. Linn. With. Willd. Sm. *P. pumila*. Jacq. *Peucedanum minus*. Bauh. Ray. Huds. *P. pumilum*. Ger. Em. E.) Mountainous pastures. Uphill, Somersetshire. St. Vincent's Rock, behind the Hot Well House, Bristol. (In pastures near the church of Athboy, county of Meath, in great quantities. Dr. Wade. E.) P. May—June.*

APIUM.† *Involucr.* one leaf: *Petals* equal, with inflexed points: *Fruit* small, gibbous, ribbed.

A. GRAVEOLENS. (Leaflets of the stem-leaves wedge-shaped: stem furrowed: involucrellum none. E.)

Kniph. 5—*Ludw.* 180—*Fl. Dan.* 790—*Blackw.* 443—(*E. Bot.* 1210. E.)—*Ger.* 862—*H. Oz.* ix. 9. 8—*Fuchs.* 744—*J. B.* iii. 2. 100—*Trag.* 464—*Pet.* 26. 12—*Matth.* 768—*Dod.* 695—*Lob. Obs.* 405. 2, and *Ik.* i. 707. 1—*Ger. Em.* 1014.—*Park.* 926.

Involucrum often wanting. Linn. Stem smooth, shining, deeply furrowed. Umbels, some sessile, others on long fruit-stalks, appearing as if proliferous. Woodw. Root-leaves winged. Leaflets divided into three lobes, serrated. Umbels, spokes five to eleven; those of the umbellules eleven to sixteen. Petals white. (Styles permanent, wide-spreading, but not reflexed. Sm. Stems branched, spreading, one to two feet high; plant pale yellowish green. E.)

SMALLAGE. (WILD CELERY. Welsh: *Halogan*; *Perillys yr hel.* E.) Ditches and marshes. Salt marshes near Yarmouth, and in the midland counties. Mr. Woodward. Bog near Marazion, Cornwall. Mr. Watt. Moors, Sansom Fields, Worcester. Side of the river opposite St. Vincent's Rocks. (Rimrose Bridge, between Bootle and Crosby, and Park shore, near Liverpool. Dr. Bostock and Mr. Shepherd. Hackney, near Chudleigh. Rev. J. P. Jones. In water-courses on the marsh at Northfleet, in great quantities. Salisbury. In the castle-moat, Beaumaris. Welsh Bot. Ditches behind Musselburgh. Parsons, in Lightf. E.) B. Aug.‡

(*A. Petroselinum*, Common Parsley, a native of Sardinia, has little pretension to be considered indigenous to Britain, though admitted as such by some Botanists. E.)

ÆGOPODIUM.§ *Fruit* egg-oblong, ribbed, tapering at each end: (Summits simple. E.)

* (Its qualities somewhat resemble those of the preceding. E.)

† (The favourite of bees, as some choose to interpret the word; but the *pourquoi* is not obvious. E.)

‡ The root in its wild state, when it grows near water, is fetid, acrid, and noxious; (and is believed to have proved fatal in various instances; E.) but when cultivated in dry ground it loses these properties; and the root and the lower part of the leaf-stalks and stem, blanched by covering them up with earth, are eaten raw, boiled in soups, or stewed. It is then called *Celery*, (of which a red variety is much esteemed in the London markets, E.) and supposed to be hurtful to persons subject to nervous complaints. It is certainly a good antiscorbutic. The seeds yield an essential oil. Sheep and goats eat the plant. Cows are not fond of it. Horses refuse it.

§ (From *αἴς*, *aîs*, a goat, and *πῶδον*, a little foot: whence Goat-weed, rather than Gout-weed. E.)

E. PODAGRARIA.

Fl. Dan. 670—(*E. Bot.* 940. *E.*)—*Riv. Pent.* 41. *Podagraria*.—*Ger.* 848—*J. B.* iii. 2. 145—*Dod.* 320. 2—*Lob. Obs.* 398. 3, and *Ic.* 1. 700. 2—*Ger.* *Em.* 1001. 2—*Park.* 943—*Pet.* 25. 10—*H. Oz.* ix. 4. 11.

(Radical leaves bi-ternate, stalked; upper leaves ternate, ovate, opposite. *Leaflets* taper-pointed, serrated, dark green. *E.*) *Root* creeping. *Umbels* and *umbellules*, spokes fourteen. *Blossom* white. *Relh.* (*Stems* upright, one to two feet high, hollow, furrowed, leafy. *Petals* rather unequal. *Plant* destitute of both general and partial involucre. *Styles*, according to Smith, at length elongated to half the length of the fruit, permanent. *E.*)

HERB GERARD. GOUT-WEED. ASH-WEED. Orchards, gardens, and pastures, common. P. May.*

TRIGYNIA.

VIBURNUM.† *Cal.* with five divisions, superior: *Bloss.* five-cleft: *Berry* of one cell, closed: *Seed* one.

V. LANTANA. Leaves heart-shaped, serrated, veined, cottony beneath.

(*E. Bot.* 331. *E.*)—*Jacq. Austr.* 341—*Matth.* 217—*Dod.* 781—*Lob. Obs.* 591. 3—*Ger. Em.* 1490—*Kniph.* 1—*Walc.*—*Park.* 1448—*J. B.* i. 558.

(A large shrub, with numerous opposite branches. *Flowers* crowded in large dense cymes. *Leaves* oval; (finely serrated. *E.*) the down radiated, each hair consisting of several rays diverging from a point. *Flower-leaves* coloured. *Blossom* cloven half way down, white. (*Cal.* teeth minute. *E.*) *Summits* so much united as to appear one. *Berries* black. (*Branches* slender and pliant; the younger ones downy, leafy. *E.*)

WAY-FARING-TREE. (MEALY-GUELDER-ROSE. *E.*) Woods and hedges, in calcareous soil. Herts, frequent. Mr. Woodward. Ripple Field, Worcestershire. Mr. Ballard. (Common in the hedges of Dorset. Pulteney. At Sir John Malls', Dunglass glen. Hooker. About Painswick. Mr. O. Roberts. In hedges between Southam and Leamington; and Watling Street Road, near Norton, Watford, &c. Northamptonshire. Frequent in Devonshire, as about Teignmouth, &c. *E.*) S. May.‡

* The leaves may be eaten early in the spring with other potherbs. Cows, sheep, and goats eat the plant. Horses are not fond of it. (Some writers state that the root is pungently acrimonious, and was formerly applied as a cataplasm in the gout. *E.*)

† (According to Martyn, *Viburna*, in the plural, meant in classic authors, any shrubs which were used for binding or tying. *E.*)

‡ (It loves a moist soil, where it not only grows more rapidly than in dry situations, but produces more numerous and larger globes of its pale petals. *Sylv. Florif.* It is a pleasing enlivener of the varied shrubbery; amid more sombre foliage,

“throwing up
Its silver globes, light as the foaming surf
Which the wind severs from the broken wave.” *E.*)

The bark of the root is used to make bird-lime, though inferior to Holly for that purpose. The berries are astringent. (Evelyn says a decoction of the leaves will not only dye the hair

V. OPULUS. Leaves lobed: leaf-stalks set with glands.

(*E. Bot.* 332. *E.*)—*Fl. Dan.* 661—*Ger.* 1236. 1—*Dod.* 846. 1—*Ger. Em.* 1424. 1—*Park.* 209. 5—*Trag.* 1002—*Matth.* 1269—*J. B. i.* 553.

(A small tree, smooth in every part, with many oppositely branched, spreading, stems from the same root. *Leaves* a hand's breadth, unequally serrated, three-lobed, paler beneath, veiny, changing to bright red in autumn. *E.*) The *neutral florets* in the circumference of the umbel are the first to expand. They have five minute imperfect stamens and three pistils, which are sometimes (not always) covered by small projecting scales, of the same substance with the blossom. These abortive parts of fructification drop before the perfect flowers expand. The *summits* are scarlet, but there are no styles to the pistils, and hardly any filaments to the stamens. *Leaf-stalks* with one or two pair of glands; those near the extremity of the flowering branches with five to eight thread-like stipulæ, frequently terminated by glandular knobs. *Gough.* *Umbels* large, with five to seven spikes. *Blossoms* white, (the outer ones very large, dilated. *E.*) *Berries* red, (drooping. *E.*)

Var. 2. The *Guelder-rose*, (so called because first procured by the Dutch from Guelderland; or *Snowball-tree*, *E.*) is a variety in which nearly the

black, but will fasten the roots also. *Livia Viburni* is found upon this species. The branches being long and exceedingly tough, often shooting nearly six feet from the bottom in a year, make excellent bands for faggots. A variegated sort may sometimes be observed in gardens, the discoloration probably occasioned by an ungenial soil, it being far from permanent. In autumn the leaves acquire a rich crimson hue. The powerfully fragrant *Way-faring-tree*, is the companion and rival of the Bird Cherry in Colwick plantations, near Nottingham. It is supposed to be the plant mentioned by Virgil:

Verum hæc tantum inter alias caput exultit urbes,
Quantum lenta solent inter *Viburna* cupressi. *Ecl.* 1.

It would seem to be a truly inspiring subject, its appearance in Colwick wood having suggested the following lines:—

"*Way-faring Tree!* what ancient claim
Hast thou to that right pleasant name?
Was it that some faint pilgrim came
Unhopedly to thee;
In the brown desert's weary way,
'Midst thirst and toil's consuming sway,
And there as 'neath thy shade he lay,
Blessed the *Way-faring tree*?
Or is it that thou lov'st to show
Thy cornucopia of fragrant snow,
Like life's spontaneous joys that flow
In paths by thousands beat?
Whate'er it be, I love it well,
A name, methinks, that surely fell
From poet in some evening dell,
Wandering with fancies sweet.
A name, given in those older days,
When, 'midst the wild wood's vernal sprays
The "merle and mavis" poured their lays
In the lone listener's ear,
Like songs of an enchanted land,
Sung sweetly to some fairy band,
Leaning with doffed helms in each hand,
In some green hollow near." W. H. *E.*)

whole of the *umbel* consists of neutral florets, contracted into a globular form.

COMMON GUELDER-ROSE. WATER-ELDER. (Irish: *Keora con.* Welsh: *Gwifurnwydd y gors*; *Corswigen.* E.) Woods and wet hedges. S. May—June. Berries ripe in Sept.

SAMBU'CUS.* *Cal.* five-toothed: *Bloss.* regular, with five shallow clefts: *Berry* juicy, (one-celled, three-seeded. E.)

S. E'BULUS. Tufts with three divisions: leaves winged: leaflets lanceolate, rarely fewer than four pair: stipulæ leaf-like: stem herbaceous.

Curt.—(E. Bot. 475—*Fl. Dan.* 1156. E.)—*Woodv.* 260—*Blackw.* 488—*Mill.* 126—*Matth.* 1270—*Lob. Obs.* 589. 2—*Ger. Em.* 1426—*J. B. i. a.* 549. 2—*Fuchs.* 65—*Ger.* 1238—*Trag.* 796—*Park.* 209. 7.

Stems very brittle. *Leaves* winged, with several pair of leaflets. *Leaflets* spear-shaped, serrated, unequal at the base, the upper margin deficient. *Woodw.* *Stem* and *leaf-stalks* furrowed. *Little leaves* at the base of the leaf-stalks heart-shaped. *Calyx* segments sometimes six, purple. *Blossom* segments pointed, white above, purple beneath. *Anthers* purple; one fixed on each side of every filament, so that there are, properly speaking, ten anthers. *Berry* globular, black, often defective. *Leaflets* narrow compared with those of *S. nigra*, exhibiting an obviously different appearance, sometimes six or seven pairs, and more finely serrated. E.)

DWARF ELDER. DANE-WORT. (Irish: *Ballfart.* Welsh: *Corysgawen*; *Creulys mawr*; *Ysgawen bendiged.* E.) Hedges and road sides. Tutbury Castle, Staffordshire. Mr. Pitt. On Goose-green, near Dalton, Lancashire. Mr. Atkinson. (Among rubbish and ruined foundations of the Priory, Selborne, Hants. White's Nat. Hist. Alston Moor, Cumberland. Rev. J. Harriman. South bank of the Water of Leith. Mr. Maughan. Grev. Edin.) Warboys, Huntingdonshire; and Honingham, Norfolk. Mr. Woodward. Common in hedges of Bedfordshire. Abbot; and Cambridgeshire. Relhan. In Rainrow, road side Bridge, near Goodwin's Mill, Cheshire. Ray. Very near Aspatria, Cumberland, and only in one field, east of the town. Rev. J. Dodd, in Bot. Guide. Between Llansannan Church and the river, Denbighshire. Mr. Griffith. On a small declivity near Bryn, Beaumaris. Welsh Bot. In Spetisbury Town Street, and in hedges above the village, near the Rings, Dorsetshire. Pulteney. Lane between Causey Hall and Beamish Burn, Durham. Mr. Winch. Near Carisbrook Castle, Isle of Wight, and near Housbourn. Mr. E. Forster, jun. Bot. Guide. Near the church at Southwood, Norfolk, abundantly. Rev. G. R. Leathes, ditto. Below Scarborough Castle walls. Rev. Archdeacon Pierson. At the foot of Tamworth Castle Hill, towards the river. Hedge bank in a field below the Frith Wood, near Painswick. Mr. O. Roberts. Near Grafton Church, Warwickshire. Purton. Beaulieu Abbey, and Hordle churchyard, Hants. Watling-street Road, where crossed by the footpath from Norton to Whitton, Northamptonshire. A few hundred yards from Knowle, by the side of the road leading to Warwick. Moreton Morrel churchyard, same county. Barren hills above the Avon, St. George's, near Bristol. *S. Ebulus* has not

* (So called from *Sambuca*, a musical instrument of the ancients, (perhaps the same as the Italian pipe *Sampogna*), usually made of this plant. E.)

hitherto been remarked in the county of Devon; but in the autumn of 1827, we observed what we have little hesitation in announcing as this plant by the side of the new road from Shaldon to Mary Church, a few hundred yards only from the latter place, and still nearer to the guide post; where likewise grows *Rumex acutus*, var. *sanguineus*. E.)

S. July.*

S. NI'GRA. Tufts with five divisions: leaves winged: leaflets seldom more than two or three pair, nearly egg-shaped, serrated: stem ligneous.

(E. Bot. 476. E.)—*Fl. Dan.* 545—*Blackw.* 151—*Woodv.* 78—*Matth.* 1268—*Ger.* 1234—*Fuchs.* 64—*Ger. Em.* 1422. 1—*Dod.* 845, 1—*Ger. Em.* 1422. 2—*Park.* 208. 8—*Trag.* 997—*J. B. i. a.* 544.

(A bushy strong-smelling tree, with branches opposite, containing light white pith; the young shoots green, tall and straight, growing rapidly. Flowers numerous, forming large cream-coloured cymes, and emitting a sickly scent. E.) Berries green, at length blackish purple, with juice of the same colour. Anthers yellow, arrow-shaped, one on each filament.

COMMON ELDER. (In Scotland and other parts called *Bore-tree*, from its large pith, which, being easily driven out, makes it like a bored pipe. Irish: *Crann tromain*. Welsh: *Ysgawlwyn cyffredin*. Gaelic: *An drumman*. E.) Woods and damp hedges. (It is often bird-sown, or self-planted on walls, lofty towers, or the trunks of decayed trees. E.) S. April—May.†

* Has the same medicinal properties with *S. nigra*, but in some respects more violent, and therefore less manageable. A dram and a half of the root is a strong cathartic. The berries give out a violet colour (and are used to dye blue. E.) The green leaves drive away mice from granaries, and moles (as do those likewise of the Common Elder), from their usual haunts; and the Silesians strew them where their pigs lie, under a persuasion that they prevent some of the diseases to which those animals are liable. Neither cows, goats, sheep, horses, or swine eat it. (The drastic effects may be mitigated by continued coction, according to Fernelius; but Salisbury well remarks that these are "too churlish medicines for general use." Martin Blockwitz composed a volume upon its virtues, entitled *Anatomia Sambuci*. Boiled and reduced to powder the plant is used advantageously for scouring metallic vessels. E.)

† The whole plant has a narcotic smell; (nor is it prudent to sleep under its shade, notwithstanding the injunction of Thomson for such recreation to

"Seek the bark where flowering Elders crowd."

Evelyn adduces an instance of a dwelling in Spain which was rendered uninhabitable by the proximity of such trees. The wine prepared from the berries will be acceptable to invalids, however it may be despised by the legitimate sons of Bacchus. Elder-flower water is frequently used as a cooling lotion; and an infusion of the flowers is considered by the Russians diaphoretic, and tending to dispel inflammatory disorders. E.) The wood is hard, tough, and yellow. It is commonly made into skewers for butchers, tops for angling rods, and needles for weaving nets. It is not a bad wood to turn in the lathe. (The dried flowers make a debilitating tea, not to be persisted in. An infusion of the leaves destroys insects on delicate plants, almost as effectually as tobacco water. E.) The inner green leaves and bark are purgative, and may be used with advantage where drastics are requisite. In smaller doses they are diuretic, and have been eminently serviceable in obstinate glandular obstructions, and in dropsies. If sheep affected with the rot be placed in a situation where they can get at the bark and young shoots, they will soon cure themselves. It is an ingredient in the black dye. The leaves are admitted into several cooling ointments. If turnips, cabbages, fruit trees, &c. (which are subject to blight from a variety of insects,) be whipped with the green leaves and branches of Elder, insects will not attack them. Phil. Tr. v. 62. p. 348. A decoction of the flowers, taken internally, is said to promote expectoration in pleuritis. Externally, when dried, they are used in fomentations to ease pain and abate inflammation. They are likewise useful to give a flavour to vinegar. They are fatal to turkeys. A rob prepared from the berries is a gentle aperient, and promotes perspiration. The juice of

Var. 2. Berries white or green.

Staffordshire, Warwickshire, and Shropshire.*

Var. 3. *Laciniata*. Leaflets jagged.

Kniph. 8—*Ger.* 1234. 2—*Dod.* 845. 2—*Lob. Obs.* 589. 2—*Ger. Em.* 1422. 3

—*J. B. i. a.* 549. 1—*Park.* 208. 3.

Retzius in his third fasc. believed this to be a distinct species, but in his sixth fasc. he abandons this opinion, having found that the seeds uniformly produce *S. nigra*.

PARSLEY-LEAVED ELDER. (Near Bury, Suffolk. Mr. Woodward. E.) In hedges near Manchester, Bristol, Dartford, and Walsoken, near Wisbech. S.

(We have seen a small variety, having only three lobes on each leaf, and those remarkably obtuse, and circular. It is said to be a native of Salisbury Plane, and is preserved in Chelsea Garden. E.)

STAPHYLEA.† *Cal.* with five divisions: *Petals* five: *Caps.* inflated, two or three adhering together: *Seeds* two, globular, marked with a scar, somewhat like a nut.

S. PINNATA. Leaves simply winged: (styles and capsules only two. E.)

(*E. Bot.* 1560. E.)—*Kniph.* 3—*Gisek.* 56—*Matth.* 274—*Lonic.* 30. 2—*Lob. Obs.* 540. 2—*Park.* 1418—*J. B. i. a.* 274—*Ger.* 1249—*Trag.* 1098—*Dod.* 818—*Ger. Em.* 1437.

(*Capsules* two, rarely three together, membranous, inflated, obliquely pointed, very large. *Seeds* large, when ripe hard, and as if varnished. A low shrub, somewhat resembling an ashling, branched, smooth. *Flowers* bell-shaped, yellowish. Fl. Brit. E.) *Styles* sometimes two, but mostly three. *Capsule* three-celled. *Seeds* constantly two in the larger cells, that in the third abortive. *Leers.* *Leaflets* varying from egg-shaped to spear-shaped, but always pointed. *Blossoms* in whorls, (greenish or yellowish, bell-shaped, pendulous. E.)

WINGED BLADDER-NUT. (In hedges and thickets, but rare. E.) Hedges

the berries is employed to give a red colour to raisin or sugar wines. The berries are poisonous to poultry. The pith being exceedingly light, is cut into balls, used for delicate toys and electrical apparatus. * (If a twig of Elder be partially cut, then cautiously broken, and the divided portions carefully drawn asunder, the spiral air-vessels, (the largest in the vegetable economy), will be distinctly observable resembling a screw, and their structure become apparent. Several plates illustrative of the principles of vegetation and of these organs in particular, will be found in Fitzgerald's "Surveys of Nature," v. 2.; and more numerous and exquisitely finished ones in the admirable "Elements of Botany," by Anthony Todd Thomson, F. L. S. Elder is an excellent nurse plant in exposed situations, and forms a rapid hedge in moist places. Sheep browse upon it. Horses, cows, and goats refuse it. Linn. Others say that cows are fond of it. (A striped-leaved variety is raised in the nurseries. E.) *Aphis Sambuci* and *Phalena Sambucaria* are found upon it. (Elder is also a favourite resort of the orange-striped caterpillar, which goes into the ground, and changes into a chrysalis about September, and in July appears as the gigantic moth *Sphinx atropos*, (*Tête de mort*), with a black head and very large eyes, and its black thorax plainly representing a death's head. With this awful figure, it emits a shrill and dismal cry. The dead trunks and branches of Common Elder are frequently affected with patches of *Thelophora Sambuci*. *Grev. Scot. Crypt.* 242. "Resupinate, effused, thin, very white, rugose with tubercles, somewhat farinose and chalky, the margin glabrous." E.)

* The berries of this kind are also used for making a delicate wine.

† From *σταφύλη*, a grape; which the fruit somewhat resembles. E.)

near Pontefract, Yorkshire. Ray. (Woods in the farther part of that county. Merrett. E.) About Ashford, Kent. Parkinson. S. June.*

TAMARIX.† *Cal.* with five divisions: *Petals* five: *Caps.* one-celled, three-valved: (*Seeds* with a stipitate feathery crown. E.)

T. GAL'LICA. Flowers with five stamens: branches scaly; scales sessile, alternate.

(*E. Bot.* 1318. E.)—*Mill. Ic.* 262. 1—*Blackw.* 331. 2—*Lob. Adv.* 447. and *Ic.* 218, *Narbonens.*—*Kniph.* 2.

(*Branches* slender, drooping, red, shining. *Leaves* small, tiled, sharp-pointed, rather fleshy, smooth, with a loose spur at the base. *Fl. Brit.* E.) *Flowers* in long slender spikes, white, with a rosy tinge.

(**FRENCH TAMARISK.** On the cliffs of the southern and western coasts of England. In great plenty on St. Michael's Mount, Cornwall, and every where about the Lizard, though chiefly on the banks of earth called hedges; first communicated to me by Mr. Giddy. On the beach near Hurst Castle. Dr. Pulteney. (On the cliff to the east of Hastings. Rev. Dr. Goodenough. By Landguard Fort. Sir T. G. Cullum. Forms the ornament of Sandgate, Kent; flowering thrice within the year. Mr. Gerard E. Smith. On the Den at Teignmouth, and some very luxuriant specimens on the opposite shore at Shaldon. E.) S. July.‡

CORRIGIOLA.§ *Cal.* five-leaved, border membranous, white: *Petals* five: *Nut* small, globose, but three-sided.

C. LITTORALIS. Leaves oblong: flowers in a terminal cluster.

(*E. Bot.* 668. E.)—*Fl. Dan.* 334—*J. B.* iii. 379. 2—*H. Or.* v. 29. 1.

(*Root* slender. *Stems* several inches long, numerous, spreading on the ground, little divided, smooth, leafy, flowering chiefly at the extremities. *Leaves* alternate, strap-spear-shaped, blunt, very entire, rather fleshy, smooth, glaucous, attenuated at the base. *Seed* black. *Fl. Brit.* E.) *Flowers* numerous, peaily, sometimes lateral. *Calyx* very like the blos-

* (Cultivated in nurseries as a curious, if not ornamental shrub. The seed-vessel, from whence it derives its name, affords a fine example of the inflated capsule. The kernels are said to prove emetic. The nuts being smooth and hard, are sometimes appropriated by our Romish brethren to their chaplets of beads or rosaries, a pagan invention borrowed from the Mahometans by Peter the Hermit. E.)

† (Possibly derived from a Hebrew word, descriptive of its supposed absterive qualities. E.)

‡ (Sheep are fond of browsing on the branches of this plant, probably induced by the saline taste. Smith. Being little affected by the sea spray it forms a useful shelter in situations too exposed for other trees; and is in itself singularly elegant.

————— "On yon rough crag,
Where the wild *Tamarisk* whistles to the breeze."

In ancient usage Tamarisk was by association connected with crime; it being customary with the Romans to wreath the heads of its flexible and blushing branches around offenders. The Tartars and Russians make whip handles of the wood. It is said to be used for besoms where abundant.

§ (Diminutive of *corrigia*, a leather thong; to which the leaves may be imagined to bear a slight resemblance. E.)

som, but the segments towards the base are of a rich chesnut brown. The whole habit of the flowers, more particularly the seeds and the pistils, resemble *Polygonum*. In Portugal it is not limited to the sea-side, but grows in hedge banks and in ploughed fields at a distance from the sea.

SAND STRAPWORT. Found by Hudson on Slapham Sands, beyond Dartmouth, and near the Star Point. Mr. Martyn. (On the beach near the tin mine at Helston, Cornwall. F. Borone. On the shore of Loe Pool, near Helston, opposite Penrose, on each side of a low wall. Mr. E. Forster, jun. in Bot. Guide. E.) A. June—Sept.

TETRAGYNIA.

PARNASSIA.* (Nectaries five, fringed with bristles bearing globules: Caps. four-valved, one-celled. E.)

P. PALUSTRIS. (Leaves heart-shaped: nectary an obcordate scale, fringed with numerous filaments supporting pellucid globules. E.)

Dicks. H. S.—(Hook. Fl. Lond. E.)—E. Bot. 82—Kniph. 7—Ludw. 110—Mill. Ill.—Fl. Dan. 584—Dod. 564. 3—Lob. Obs. 330. 1—Ger. Em. 840. 1—Park. 429. 2—H. Ox. xii. 10. 3—Ger. 691. 2—J. B. iii. 337. 2.

Stem somewhat twisted. Whilst in flower, the *germen* having neither style nor summit, is open at the top. The *stamens* apply their anthers alternately upon the orifice, and having discharged their pollen, recede to the petals. Linn. (*Stems* undivided, with five acute angles, about nine inches high, single-flowered. E.) *Petals* a little scalloped at the edge, slightly notched at the end, white, with semi-transparent greyish veins. *Nectaries* (conspicuously beautiful. E.) green, the globules yellow, from ten to fifteen, generally thirteen. *Stamens* only half as long as the petals, at first not longer than the germen, but each successively extends beyond the rest, as it sheds its pollen on the orifice of the germen, which closes as soon as all the anthers have completed that process. *Root-leaves* heart-shaped, on long leaf-stalks. *Stem-leaves* sessile. (*Seeds* numerous, very small. *Bloss.* large. E.)

GRASS OF PARNASSUS. (Most improperly termed a grass: and not clearly ascertained to be the plant originally so designated. E.) **MARSH PARNASSIA.** (Welsh: *Brial y gors*. E.) Moist meadows in Wales and the northern counties. Common in every boggy meadow in Norfolk. Mr. Woodward. Abundant in a meadow called the Moor, at Blymhill. Rev. S. Dickenson. Coleshill Bog, and Knowle, Warwickshire. Purton. Bootle Marsh and Croshy Rabbit Warren, near Liverpool; Killicranke; Loch Nakiel; head of Loch Awe. Dr. Bostock. On the tops of the high lands about Buxton. Miss Sparrow.† In Purbeck; on Wareham

* (Supposed to be the real *ayopsis* & *παραopsis*, Grass of Parnassus, of Dioscorides. E.)

† (Another striking confirmation of the remark, that the same species of plants may grow both on lofty elevations and in low marshes; because the clouds resting on the tops of mountains perpetuate moisture, as do fogs in meadows, and other low situations. Dr. Hooker informs that this elegant plant, plunged into water in a garden pot, will continue to blossom many weeks: especially, we may add, if originally removed with a ball of its native earth. E.)

Heath. Pulteney. In the Orkney Isles, of an extremely diminutive size, scarcely an inch high in full blossom, with all the characters of the more usual appearance of the plant. Hooker. In Anglesey. Welsh Bot. Pentland Hills, abundant near the water-house. Mr. Neill. King's Park. Mr. Bainbridge. Greiv. Edin. (In meadows at Penn's Mill, near Erdington, Warwickshire. In marshy ground by the side of a rill a few hundred yards to the left of the road leading from Norton to Dodford, near Daventry. E.) P. Aug.—Sept.

PENTAGYNIA.

STATICE.* *Cal.* one leaf, entire, plaited, dry, permanent : *Petals* five : *Caps.* one-celled, without valves : *Seed* upright, (invested with the funnel-shaped calyx. E.)

S. ARMERIA. Stalk simple, bearing a globular head of flowers : leaves strap-shaped.

Dicks. H. S.—(Hook. Fl. Lond. 122. E.)—E. Bot. 226—Fl. Dun. 1092—Walc.—Kniph. 5—Dod. 564. 1—Lob. Obs. 242. 1—Ger. Em. 602. 1—Park. 1279. 13—Ger. 482. 1—J. B. iii. 336. 2—Pet. 72. 8.

(Root woody. *Calyx* small, upright. *Petals* inversely egg-shaped with a small claw. Plant growing in dense tufts. *Leaves* all radical. *Blossom* rose-colour ; rarely white. E.) *Stalk* from two to eight inches high. (*Styles* beset with delicate white patent hairs near their base. *Calyx* singularly scarioso at the extremity, with five nerves of a green colour tinged with red, running up into the white membrane. *Foliage* remarkably linear and channelled. When young the flower-stalks are covered with a scarioso sheath, which bursts into a triphyllous membrane. The alpine variety is generally small. In Orkney, upon the shores of North Ronaldsha, the whole plant rises scarcely an inch above the ground, with the head quite sessile. Fl. Lond. E.)

COMMON THRIFT. SEA GILLIFLOWER. LADIES' CUSHION. (Welsh : *Archmain* ; *Clustog Fair*. Gaelic : *Bàr-dearg* ; *Tonag-a-chladaich*. E.) Meadows and rocks on the sea-coast, and mountainous situations, as Snowdon ; near Settle ; and Ingleborough. Wensley Dale, between Askrig and Aysgarth. Mr. Wood. Wells, Norfolk ; Southwold, Suffolk. Mr. Woodward. All along the rocky coast of Cornwall. Mr. Watt. At Knot's Hole, Garston, near Liverpool ; between the Basaltic columns on the Isle of Ulva. Dr. Bostock. About Barmouth. Miss Roberts. (In great profusion by the footpath leading over the rocks between Whitburn and Tynemouth. On the Flat Holmes, in the Severn. Incketh, in the Firth of Forth. On the cliffs near Sidmouth, very large. E.) P. May—June.†

S. LIMO'NIUM. (Stalk panicked, cylindrical : spikes level-topped, reclining : leaves smooth, without nerves, awned at the apex. E.)

* (From *oratio*, enduring long. E.)

† (It is much used in gardens as an edging for borders, and when in full blossom gives a glowing tinge to pastures on the sea coast. (By cultivation it increases in size and varies in colour, and has a pleasing effect in its more natural clusters on rugged banks or rock-work. E.) Horses and goats eat it. Sheep are not fond of it.

Kaiph. 4—*E. Bot.* 102—*Blackw.* 481—*Fl. Dan.* 315—*Matth.* 980—*H. Ox.* xv. 1. row 1. n. 1. f. 4th—*Dod.* 351—*Lob. Obs.* 157. 3—*Ger. Em.* 411. 1—*Park.* 1234—*J. B.* iii. 876. 3.

(Plant six to twelve inches high. *Leaves* egg-spear-shaped, two to three inches long, subcoriaceous, chiefly radical, glaucous, tapering into foot-stalks. *Calyx* reddish. *Bloss.* bright blue, or lavender-colour, with membranous scales. E.)

Var. 1. Much smaller. *Leaves* gradually tapering to the base, having no regular leaf-stalks. Ray.

Lob. Adv. 123—*Ger. Em.* 411. 2.

We have two varieties corresponding with the above character; in the one the leaves are short and blunt, in the other longer and more pointed. The sharp point at the end of the leaf marks them both as belonging to this species. Woodw. *Blossom* of a very deep purple. Mrs. Watt.

This appears to be the plant which some few modern Botanists, after Gerard and Ray, consider a distinct species, *S. cordata*, and said to be well known in the Chelsea and Oxford gardens. Notwithstanding the decided opinion of Ray, "*a vulgari majore manifeste distinctum esse agnovi*," we suspect Linnæus was fully justified in adding, "*an varietas Limonii?*" Mr. G. E. Smith observes, "the most obvious character is presented by the leaves; and by the structure of the calyx:" which latter "is for half its length membranous, and is closed after flowering; in which respect it differs from *S. Limonium*; which, having the hard ribs continuous nearly to the summit of the calyx, exhibits that part expanded after flowering." Vid. Sm. Obs. Pl. 2. E.)

Harwich. Ramsgate. Ray. Cornwall. Mrs. Watt. Lynn. Mr. Woodward. (Holmes Islands, in the Severn. E.)

Var. 2. Leaves longer, and taper-pointed. Flowers later. Ray.

LAVENDER THRIFT. (SEA LAVENDER. Welsh: *Llemyg*. E.) Salt marshes, and rocks on the sea-coast. Wells, Norfolk; Southwold, Suffolk. Mr. Woodward. (North shore of the Wear, at Hilton, near Sunderland: by the Wear, near Southwick; on Basaltic rocks, called St. Cuthbert's Island, at Holy Island, Northumberland. Mr. Winch. With the preceding, in Anglesey, on rocks on the south-west coast. Welsh Bot. Garston, near Liverpool; Brading Harbour, Isle of Wight. Dr. Bostock. E.) Sea banks near Walton Essex; and between Heybridge and Malden. Ray. Both varieties on the Lancashire coast at Low Furness, and on the west side of Milnthorpe Sands, Westmoreland. Mr. Gough. (Coast of Galloway, near Kirkcudbright. Maughan, in Hook Scot. Em. Empurpling acres of the shore between Star-cross and Powderham, Devon. E.) P. July—Sept.*

S. RETICULATA. Stalk paniced, prostrate, dichotomous, zigzag: barren branches naked and reflexed: leaves wedge-shaped, without awn-points.

(*E. Bot.* 328. E.)—*Pluk.* 42. 4.

Root-leaves oblong-wedge-shaped, on leaf-stalks. *Stipulae* half embracing the stem, awl-shaped, terminating in a long point, membranous at the

* (Messrs. Kirby and Hooker discovered on this plant, in Norfolk, a nondescript insect, *Apion Limonii*, supposed to be the most splendid species of the genus. Linn. Tr. v. 9. 78. E.)

edge. Woodw. (*Blossoms* purplish blue, terminal, clustered. *Plant* about six inches high. E.)

MATTED SEA LAVENDER or THRIFT. (Muddy sea-shores, and salt marshes. E.) At Wells, Norfolk, abundantly. Mr. Woodward. At Blakeney. Messrs. Crowe and Pitchford. (Tydd Marsh, Cambridgeshire. Skrimshire, in Bot. Guide. On the salt marshes near Frieston, Liverton, &c.; also near Fosdyke Wash, Lincolnshire, it grows in the level grassy land where the sheep bite close. Sir J. Banks. Mull of Galloway. Mr. Gokkie, in Hook. Scot. E.) P. July—Aug.

LINUM.* *Cal.* five-leaved: *Petals* five: *Caps.* ten-valved; ten-celled: *Seeds* solitary.

(1) *Leaves alternate.*

L. USITATIS/SIMUM. (*Calyx*-leaves ovate, acute, three-ribbed: petals scalloped: leaves spear-shaped: stem mostly solitary. E.)

Curt. 326.—(*E. Bot.* 1357. E.)—*Kniph.* 9—*Ludw.* 144—*Blackw.* 160. 2—*Woodv.* iii.—*Fuchs.* 471—*J. B.* iii. 451—*Matth.* 414—*Dod.* 533—*Lob.* *Obs.* 225. 1—*Ger. Em.* 556—*H. Ox.* v. 26. row 2. 1—*Lonic.* 153. 2—*Blackw.* 160. 1—*Trag.* 353.

Stem (slender, full eighteen inches high. *Lower leaves* short and blunt. *Flowers* several, in a corymbose panicle, large. E.) cylindrical. *Petals* sky blue, striated with deeper-coloured lines. *Filaments* united at the base. *Styles* blue, thicker towards the top. The inner edge of the *calyx* a little fringed. (*Seeds* elliptical, polished. E.)

COMMON LINSEED or FLAX. (Welsh: *Llin'cyffredin.* Gaelic: *Lion.* E.) Corn-fields and sandy pastures in Dorsetshire and Devonshire. Near Cawston, Norfolk. Mr. Bryant. Corn-fields, Ripton, Huntingdonshire. Mr. Woodward. Downs, old pastures, and corn-fields, near to commons about Redruth and Trelubbus, Cornwall. Mr. Watt. (At Baydales, near Darlington. Mr. Winch. About Kennerley, Isle of Wight. Mr. W. D. Snooke. E.) A. July.†

* (From *Λινος*, thread: alluding to its general appropriation both in ancient and modern times: and thence also the English trivial, and the manufactured article. E.)

† This valuable plant originally came from those parts of Egypt which are exposed to the inundations of the Nile, where it has been a staple article time immemorial. *Exod.* ix. 31. (It has long been generally cultivated in the north of Europe: at one period private families raised enough for their own consumption; when the process of maceration proving highly detrimental to the streams and common ponds, was subjected to certain penal regulations. *Temp. Hen. VIII.*—Latterly its cultivation has been encouraged by a Parliamentary premium of fourpence for every fourteen pounds. It has been proposed to curtail the process of maceration, by using boiling water. E.) The seeds yield, by expression only, a large portion of oil, which is an excellent pectoral, as is likewise the mucilaginous infusion of the Lint-seed. They make an easy and useful emollient cataplasm in cases of external inflammation, and to promote expectoration; and are the food of several small birds. After the oil is expressed, the remaining farinaceous part, called Oil Cake, is given to oxen, who soon grow fat upon it; (to broken-winded horses, and also used for manure. Mixed with skimmed milk it is used for fattening house lambs and calves. Salisbury states that powdered, and sown in the drills with turnip seed, it insures a fine crop. E.) The oil itself differs in several respects from other expressed oils: it does not congeal in winter, nor does it form a solid soap with fixed alkaline salts: and it acts more powerfully as a men-

L. PEREN'NE. (Calyx-leaves obovate, blunt, about five-ribbed, smooth: leaves strap-spear-shaped, very entire: stems numerous, ascending. E.)

Var. 1. Upright.

E. Bot. 40—*Mill.* 166. 2—*Krapp.* 2.

(Stems a foot high. E.) Calyx leaves concave, with a short bluntish point at the end, not fringed or hairy. (Blossoms blue, smaller than those of the last. E.)

Var. 2. Stem trailing. Both varieties rise from the same root. In the upright the stamens are longer than the pistils, in the trailing they are shorter. Huds.

PERENNIAL BLUE FLAX. Pastures and meadows in calcareous soil. Marham, Norfolk; Ixworth, Suffolk; Gogmagog Hills. Mr. Woodward. (Hedges near Sowdown, Devon. Polwhele. On the banks about Bernack Heath, and Wittering Heath, Northamptonshire. Morton. In Bulmer Field, at the end of the avenue leading to Castle Howard. Teesdale. E.) P. June—July.

(**L. ANGUSTIFOLIUM.** Calyx-leaves elliptical, three-ribbed, acuminate, as well as the capsule: leaves three-nerved, strap-awl-shaped, rough when stroked downwards: stems numerous. E.)

(*E. Bot.* 381. E.)—*Jacq. Austr.* 215—*Clus. Hist.* i. 318. v.—*Bocc. Mus.* t. 125.

Clus. Hist. i. 318. left hand fig. *Lob. Obs.* 226. 2. and *lc.* 1. 413. right hand fig. are tolerably good representations of it, but the stems are too upright at the base. Leaves stiff, pointed, scattered, hairy underneath, as far as the stem is trailing pointing upwards, above that in various directions. Calyx shorter than the capsule, egg-shaped, blunt, but ending in a sharp point, keeled with a prominent rib. Blossom much smaller than that of *L. perenne*, pale reddish purple with darker lines; petals not absolutely entire. Style not bent back beyond the stamens. Woodw. (Root fibrous, pale brown, woody. Stems eighteen to twenty-four inches, or more, in

strum upon sulphureous bodies. When heat is applied during the expression, it obtains a yellowish colour, and a peculiar smell. In this state it is used by painters and varnishers (and is the only vegetable oil suitable for their purposes. E.) The fibres of the stem are manufactured into thread and linen cloth, from the finest cambric to the coarsest canvas; and this when worn to rags is made into paper. (Some principal Glasgow manufacturers have recently ventured to speculate on the cultivation of Flax after the mode practised in Holland, in certain districts of the south of Ireland, particularly on rich lands, in the neighbourhood of Bruff, in the county of Limerick; anticipating a produce which may rival in texture and cheapness the finest imported raw material. This is a consideration of no small importance, as providing manual employment for labourers of every age, even during the most inclement season; by which Ireland would be enabled in a great degree to supersede the Russian or Dutch importations; nor would the practice be extended to Hemp with less beneficial results.—A correspondent in the Farmer's Journal, for the fattening of cattle with flax-seed, directs: boil the seed down to a jelly, adding a small quantity of salt, and sufficient pollard and chaff to make the food tolerably solid. Of this preparation give one pound daily to each beast, gradually increasing the quantity to four pounds. It may be further remarked, as stated by Mr. James Hall, Month. Mag. v. 26, that even the refuse of Flax, usually thrown away after dressing, though too rough and short for being converted into cloth, on being beaten and shaken so as to separate the straw from the tough stringy particles, (which can be speedily done by a horse or mill,) becomes thereby as soft and pliable, and as useful for making paper, as the longest, and what is reckoned the most valuable part of the plant, after it has been converted into cloth. E.)

height, always nearly upright. *Leaves* sometimes five-ribbed. *Panicle* of few flowers. Sm. E.) *Petals* wedge-shaped, deciduous, slightly united by the claws. *Stamens* white, scarcely broader at the base. *Anthems* blue, inclined to the styles, somewhat united. *Styles* the length of the filaments, bluish, slightly cohering. *Capsule* globular but tapering to a sharp point. Giddy.

NARROW-LEAVED PALE FLAX. (Welsh: *Llin culddail*. *L. angustifolium*. Huds. Fl. Brit. With. Ed. 2. *L. tenuifolium*. With. Ed. 4. A very different plant from *L. tenuifolium* of Linn. Sm. E.) Dry meadows and pastures. Very plentiful in Cornwall. Mr. Watt. Minster, in the Isle of Sheppey; and Deal. Hudson. (Near Allerton Hall, Liverpool. Mr. Shepherd. Darsham, Suffolk. Mr. Davy. 'On the cliff edge, a little west of Pegwell, near Ramsgate. Mr. G. E. Smith. On the beach between the mount and Friars bäch, and below Trefarthen, Anglesey, where grow also other species. Welsh Bot. On rocks by the sea side a short distance east of Teignmouth. E.) P. June—July.

(2) *Leaves opposite.*

L. CATHARTICUM. *Leaves* opposite, egg-spear-shaped: panicle dichotomous: petals acute.

Dicks. H. S.—(E. Bot. 382. E.)—Kniph. 8—Ludw. 143—Curt. 151—Walc.—Blackw. 368—J. B. iii, 455. 2—Pet. 55. 12—Ger. Em. 560. 5—Park. 1336. 10—Barr. 1165. 1.

(*Stems* one or more, very slender, two to six inches long. *Flowers* pendulous before opening, white, small, tremulous. E.) *Calyx* edge fringed with minute glands on foot-stalks. St. *Filaments* united, inclosing the lower half of the germen.

PURGING FLAX. MILL-MOUNTAIN. (Irish: *Kealagh*. Welsh: *Llin y tylwyth leg*. Gaelic: *An caol-miosachan*. E.) Dry meadows and pastures. A. May—July.*

SIBBALDIA†. *Cal.* ten-cleft: *Petals* five, attached to the calyx: *Styles* from the sides of the germen: *Seeds* five, naked.

S. PROCUMBENS. *Leaflets* with three terminal teeth, wedge-shaped.

Dicks. H. S.—(E. Bot. 897. E.)—Fl. Dan. 32—Sibbald.—Penn. Voy. ii. 3, at p. 43—Pet. 41. 7.

Root woody. *Stems* trailing, covered with the remains of the dead leaf-stalks. *Leaf-stalks* slender, below oblong, membranous, embracing the stems. *Pistils* sometimes ten or five in the same plant. *Leaves* entire at the edges, lopped and tridentate at the end, (the middle tooth smallest.

* An infusion of two drams or more of the dried plant is an excellent cathartic, and has been given with advantage in many obstinate rheumatisms. It frequently acts as a diuretic. Horses, sheep, and goats eat it. (The leaves are often infested with *Uredo Lini*, of a bright yellow colour, roundish, pulverulent. Grev. Scot. Crypt. 31. E.)

† (Named by Linnaeus in memory of Sir Robert SIBBALD, who in 1684 published a learned work entitled "Scotia Illustrata," the labour of twenty years, in which this plant was first figured and described. He was the first Medical Professor instituted at Edinburgh, about the year 1685; greatly advanced the indigenous botany of Scotland; and became Physician and Geographer Royal to King Charles II. E.)

E.) When cultivated; the stamens are often seven, or more, the germens ten; seeds ten; attached to a dry hairy receptacle. (A small, glaucous plant; by no means so hairy as to justify the name of *Silver-weed*, which more properly belongs to *Potentilla anserina*, though erroneously adopted in our preceding Editions.

PROCUMBENT SIBBALDIA. E.) Mountains of Scotland. North side of Ben Lomond, three-fourths of the way up the mountain, plentiful. On Ben Mor, sparingly. Mr. Brown. (Ben Lawers and Ben-y-Gloe. Mr. Winch. E.) P. July—Aug.*

HEXAGYNIA.

DROSERA.† (*Cal.* five-cleft: *Pet.* five: *Caps.* one-celled, three to five-valved, many-seeded. E.)‡

D. ROTUNDIFOLIA. (Leaves radical, nearly orbicular, on hairy foot-stalks, spreading: flower-stalk bearing a simple raceme. E.)

(*Hook. Fl. Lond.* 189.—*E. Bot.* 867.—*Fl. Dan.* 1028. E.)—*Sheldr.* 39—*Lob. Obs.* 472. 2—*Ger. Em.* 1556. 1—*Park.* 1052. 1. b. c.—*Pet.* 63. 10—*Blackw.* 432—*Thal.* 9. 1—*J. B.* iii. 761. 2—*Barr.* 251. 1—*Trag.* 529. 3—*Lonic.* 222. 2—*Ger.* 1556. 1. .

Capsules three-valved. *Summits* club-shaped. *Stamens* shorter than the petals. *Petals* inversely-egg-shaped. *Flowers* on fruit-stalks, upright. *Leaves* concave, covered on the upper surface and fringed with viscous red hairs. *Flower-stalks* few, upright, two or three inches high, cylindrical, smooth. *Bunch* terminate, most frequently solitary, revolute when young, simple. *Fl. Brit.* Blossom white, small. (*Petals* and *stamens* invariably five. *Plant* turns black in drying: sometimes has been observed to acquire a stem. E.)

ROUND-LEAVED SUN-DEW. RED-ROT. (Welsh: *Toddaidd rudd*; *Tawddrudd crynddail*. Gaelic: *Lusna-fearnaich*. E.) Mossy bogs, not unfrequent. Malvern Chase, on the side of the rivulet flowing from the Spa. Mr. Ballard. (About Allerton Hall, near Liverpool. Mr. Shepherd. Coleshill bog and pool. Purton. In the bogs of Bin's-pond, Selborne. White's Nat. Hist. In Anglesey, as also *D. longifolia*. Welsh. Bot. Birmingham Heath: since drained. E.) P. July—Aug.‡

* (Whole plant astringent, like others of the same tribe. Smith. E.)

† (From *ῥοσος*, dew; limpid drops resting on pedicles borne by the leaves. E.)

‡ (Dr. Hull, whose frequent opportunities of examining the different species of *Drosera* renders his testimony particularly valuable, remarks—"The number of valves corresponds with the number of pairs of pistils, being three when the pistils are six, four when they are eight, never five, (in British plants) as stated by Linnaeus." For which reason Hudson first removed the genus from *Pentagynia*: and Hull further observes, "In no one instance have I found five pistils, the prevailing number is six; and we not unfrequently find eight, not more frequently in *Anglica* than in *longifolia*, but rather on the contrary: in *rotundifolia* never eight. E.)

§ The whole plant is acrid, and sufficiently caustic to erode the skin; but some ladies mix the juice with milk, so 'as to make it an innocent and safe application to remove freckles and sunburn. The juice that exudes from it unmix'd will destroy warts and corns. The plant has the same effect upon milk as *Pinguicula vulgaris*; and, like that too, is

D. LONGIFOLIA. (Leaves radical, obovate, erect, tapering below into long, naked foot-stalks: flower-stalks bearing a simple raceme. E.)

(Hook. Fl. Lond. 183—E. Bot. 868—Fl. Dan. 1093. E.)—Dod. 474. 2—Ger. Em. 1556. 2—Pet. 63. 11—Thal. 9. 2—J. B. iii. 761. 1—Barr. 251. 2—Lab. Adv. 454. 2—Park. 1052. 1. a—Ger. 1366. 2.

Grows with the former. Is it really a distinct species? Linn. (Scopoli states that in observing numerous specimens he has remarked one species gradually to pass into the other. Sir J. E. Smith informs us, on the authority of Mr. Davall, that in Switzerland this species and the preceding are never found together, and that *D. longifolia* is the more common. E.) In both, the *styles* are six, and the *valves* of the capsules three; (an invariable proportion in this genus. E.) (*Styles* sometimes nine. Sowerby: often varying from six to eight. Hull. *Petals* and *stamens* frequently six. Sm.

Hull well remarks, that the *foot-stalks* of the leaves in *D. rotundifolia* are hairy; in this species, and *D. anglica*, they are smooth; an excellent distinction, which Smith says is constant. E.)

LONG-LEAVED SUN-DEW (Irish: *Druighdin Monah*. Welsh: *Tawddrudd hirdail*; *Gwlithlys hirdail*. E.) Mossy and turfy bogs. In Norfolk,

supposed to occasion the rot in sheep: (whether from the caustic power inherent in the vegetable, or (as suggested by Dr. Borlase,) from an insect, the *Hydra Hydrotula* of Linnaeus, which lays its eggs and feeds on the plant, is scarcely yet determined. It may be further observed that sheep become thus diseased in seasons when these plants are not to be found. E.) Is not the sour coagulated milk of the Syrians, called *Leban* or *Leven*, at first prepared with some plant of this kind? See Russell's Nat. Hist. of Aleppo.

The name, *Sun-dew*, seems to be derived from a very remarkable circumstance in the appearance of these plants; the leaves are fringed with hairs supporting small drops or globules of a pellucid liquor-like dew, which continue even in the hottest part of the day, and in the fullest exposure to the sun. (We are indebted to an interesting little botanical work entitled the "Wild Garland" for the following appropriate lines.

"By the lone fountain's secret bed,
Where human footsteps rarely tread,
Mid the wild moor, or silent glen,
The *Sun-dew* blooms unseen by men;
Spreads there her leaf of rosy hue,
A chalice for the morning dew,
And, ere the summer's sun can rise,
Drinks the pure waters of the skies.

Wouldst thou that to thy lot were giv'n
Thus to receive the dews of heav'n;
With heart prepar'd, like this meek flow'r,
Come then and hail the dawning hour.
So shall a blessing from on high,
Pure as the rain of summer's sky,
Unsolled as the morning dew
Descend, and all thy soul imbue.

Yes! like the blossom of the waste,
Would we the sky-born waters taste,
To the High Fountain's sacred spring
The chalice let us humbly bring;
So shall we find the streams of heav'n
To him who seeks are freely giv'n.
The morning and the evening dew
Shall still our falling strength renew." E.)

frequent. Mr. Woodward. Knutsford Moor, Cheshire. Mr. Aikin. Along with *D. anglica* in Thorn Moor, Yorkshire; the latter species is nearly twice as large as the former. Mr. Robson. (On Brigstear Moss, near Kendal, growing to twice and thrice the size they do about London. Curtis. About Allerton Hall, near Liverpool. Mr. Shepherd. Marsh between Glasgow and Paisley. Hopkirk, in Hook. Scot. Keswick and Culgaith Moor, Cumberland, rare. Hutchinson. In the bogs of Bin's-pond, Selborne. White's Nat. Hist. E.) P. July—Aug.

D. ANGLICA. (Leaves radical, oblongo-spathulate, obtuse, erect, tapering down into long, naked foot-stalks: flower-stalks bearing a simple raceme: styles eight, caps. four-valved. E.)

Dicks. H. S.—(E. Bot. 869. E.)—H. Ox. xv. 4, row 1, fig. the last—Pet. 63. 12—Park, 1052. 2.

(The chief distinction seems to be the narrowness of the leaves, which Prof. Hooker observes, renders it much more deserving the name of *longifolia* than the last species. Number of parts of the flower varying from five to six; as is most usual, to eight. Hook. Nearly twice the size of the last. *Petals and stamens* usually eight. Sm. E.)

GREAT SUN-DEW. Boggy ground in the northern counties; also in Devonshire, Hants, and Norfolk. In a marsh on a heath near Holmes Chapel, Cheshire. Mr. Hunter. (On Chat Moss, Lancashire. Mr. Shepherd. Roydon Fen, near Diss, Norfolk. Mr. Woodward. On a bog half a mile from Wareham, towards Sandford Bridge. Pulteney. With the preceding species in bogs at Priestwick Carr, Northumberland. Mr. Winch. With the preceding, and near Talkin Tarn, and Unity Farm, Brampton, Cumberland. Hutchinson. Kirkconnel Moss, six miles from Dumfries. Maughan, in Hook. Scot. E.) P. July—Aug.*

* Few persons can have observed the *Drosera* in its native bogs, without remarking some of the leaves doubled up; but the cause of this, I believe, was first ascertained in this kingdom by the ingenious Mr. Whately, an eminent surgeon in London. In the month of August, 1780, that gentleman being on a visit in Derbyshire, and gathering some specimens of *Drosera*, examined some of these folded leaves, and finding a dead insect in each, was prompted to irritate the surface of other leaves, by touching them with a pin. The effect was as he expected, a sudden contraction of the leaf upon the pin. He communicated this curious fact to me; and though the experiment has since failed in my hands, I am satisfied he saw what he described. His friend, Mr. Gardom, a Derbyshire Botanist, who accompanied him at the moment of this discovery, has since written me the following account.

"In August, 1780, examining the *Drosera*, in company with Mr. Whately, on his inspecting some of the contracted leaves, we observed a small insect or fly very closely imprisoned therein, which occasioned some astonishment, to me at least, how it happened to get into that confined situation. Afterwards, on Mr. Whately's centrically pressing with a pin other leaves, yet in their natural and expanded form, we observed a remarkable sudden and elastic spring of the leaves, so as to become inverted upwards; and as it were encircling the pin, which evidently showed the method by which the fly came into its embarrassing situation. This experiment was renewed repeatedly, and with the same effect, so that Mr. Whately and myself are both certain of the fact."

Two or three years after Mr. Whately had sent me an account of his discovery, I was much pleased to find the following account of the *Drosera* in a German author, which, though it differs in some respects from the observations of Mr. Whately and Mr. Gardom, upon the whole tends further to illustrate the singular properties of these curious plants.

"July, 1779. *D. rotundifolia* and *D. longifolia*. I remarked that many leaves were folded together from the point towards the base, and that all the hairs were bent like a bow, but there was no apparent change on the leaf-stalk. Upon opening these leaves I found in each a dead insect. Hence I imagined that this plant, which has some resemblance to the *Dionaea muscipula*, might also possess a similar moving power."

POLYGYNIA.

MYOSURUS.* (*Cal.* of five leaves, elongated at the base: *Petals* five, their claws tubular, (nectariferous): *Caps.* (seeds of most authors,) collected upon a very long receptacle. Hook. E.)

M. MINIMUS.

(*E. Bot.* 435. E.)—*Kniph.* 5—*Curt.* 251—*Fl. Dan.* 406—*Mill. Ill.*—*Dod.* 112. 1—*Lob. Obs.* 242. 1—*Ger. Em.* 426. 4—*Park.* 500—*J. B.* iii. 512—*Pet.* 39. 7—*Ger.* 345. 4—*Lonic.* ii. 18. 1.

"With a pair of pliers I placed an ant upon the middle of a leaf of *D. rotundifolia*, but so as not to disturb the plant. The ant endeavoured to escape, but was held fast by the clammy juice at the points of the hairs, which was drawn out by its feet into fine threads. In some minutes the short hairs on the disk of the leaf began to bend, then the long hairs, and laid themselves upon the insect. After a while the leaf began to curve, and in some hours the end of the leaf was so bent inwards as to touch the base. The ant died in fifteen minutes, which was before all the hairs had bent themselves. On repeating this experiment I found the effects to follow sooner or later, according to the state of the weather. At eleven in the morning, a small fly placed in the centre of a leaf, died sooner than the ant had done, the hairs bent themselves as before, and at five in the evening the leaf was closed together, and held the fly shut up. The same experiment being made on *D. longifolia*, the same effect followed, but more rapidly. I observed, that in sultry weather, and hot sunshine, when the drops of juice upon the points of the hairs are largest, the experiment succeeded best. If the insect be a small one, sometimes only one edge of the leaf is folded up; hence it should seem necessary that the insect should stir all the hairs of the leaf." Roth. Beytrag. p. 64.

(Dr. Barton, of Philadelphia, has discovered a similar power in the *Asclepias Syriaca*, which by means of the irritable valves of its flowers detains flies or other insects which chance to alight upon it. *Annals of Botany*, v. 1. E.) These accounts will, I hope, occasion further observations to be made upon the British Fly-trap, which so nearly approaches in its wonderful properties to the *Dionaea muscipula*, or *Venus' Fly-trap*, a native of the bogs of Carolina. It is natural to inquire whether this destruction of insects be not necessary to the welfare of the plant? (Messrs. Kirby and Spence observe that there can be little doubt that these ensnared insects are subservient to some important purpose in the economy of the plants which are endowed with the faculty of taking them, though we may be ignorant what that purpose is. An experiment by Mr. Knight, nurseryman, seems to prove that in the case of *Dionaea*, at least, the end in view is the supplying the leaves with animal nutriment; for a plant upon whose leaves he laid fine filaments of raw beef, became much more luxuriant than others not so treated. (For an effect somewhat analogous, vid. also *Primula*, p. 289, note.) *Muscivora* also effect their purposes in some instances by viscosity, as in *Silene*; in others by the irritability of their stamens; or, as in *Lipstick*, by their leaves retaining water, in which numerous insects are drowned. E.) It is obvious that the experiments should be made upon well-grown vigorous plants on a fine day, when the drops of adhesive liquor at the ends of the hairs are always largest. It may be useful to remark, that these plants are not to be found without a close inspection of the bogs in which they grow, as they are much covered by, and entangled with moss, especially with *Sphagnum palustre*. This singular irritability may probably be detected only on hot sunny days.

The great end and aim of a botanical philosopher must be to discover and prove the several uses and adaptations of each portion of the vegetable system; and however limited may be our present attainments,—

"Let no presuming impious railer tax
Creative Wisdom, as if ought was form'd
In vain, or not for admirable ends." Thomson. E.)

* (From *μῦς*, a mouse, and *σῦς*, tail; descriptive of the shape of the receptacle. E.)

Stamens varying from four to ten or twenty. Lyons. Gmel. *Leaves* sometimes hairy. Huds. From two or four inches high. *Stalk* simple, single-flowered. *Leaves* radical, narrow, strap-shaped. *Flowers* yellowish green, terminal. *Receptacle* of the seeds very long, nearly cylindrical. The whole *plant* is acrid.

LITTLE MOUSE-TAIL. Corn-fields, meadows, and pastures, in "gravelly soil. At Lakenham. Mr. Crowe. Near Derby. Mr. Whately. Malvern Chase, Worcestershire. Mr. Ballard. (Earsham, Norfolk. Mr. Woodward. In Langton fields, near Blandford. Pulteney. Alne Hills: at Studley, in a field by the church. Purton. In a field near the cross, between Norton Lindsey and Warwick. Perry. Not unfrequent in Scotland. Hooker. E.) A: May—June.*

* (The peculiarly elongated receptacle, beset with some hundreds of capsules or germs, and extending above the other parts of the plant, best accords with its ancient designation, *Cauda muris*, when the seeds are ripe. E.)

CLASS VI.

HEXANDRIA.

MONOGYNIA.

(1) *Flowers with a Calyx and a Blossom.*

FRANKE'NIA. *Bloss.* five petals : *Cal.* one leaf, beneath :
Capsule one-celled, many-seeded.

BER'BERIS. *Bloss.* six petals : *Cal.* six leaves, beneath :
Berry two-seeded.

[*Hottonia palustris.* *Anthericum calyculatum.* *Lythrum hys-*
sopifolium. *Peplis Portula.*]

(2) *Flowers with a Sheath, or Husk.*

LEUCO'JUM. *Bloss.* superior, of six uniform petals, bell-
shaped : *Stam.* simple, equal.

GALAN'THUS. *Bloss.* superior, of six petals ; three inner
petals shorter, and notched at the end.

NARCIS'SUS. *Bloss.* superior, of six petals : *Nectary* bell-
shaped, inclosing the stamens.

AL'LIIUM. *Bloss.* beneath, of six petals, (egg-shaped : *Stam.*
awl-shaped, flattened : *Summit* acute : *Seeds* angular. E.)

(3) *Flowers naked.*

CONVALLA'RIA. (*Bloss.* beneath, six-cleft, deciduous :
Berry three-celled ? *Summit* triangular. E.)

ANTHER'ICUM. *Bloss.* beneath, of six petals, flat : (*Seeds*
angular. E.)

NARTHE'CIUM. *Bloss.* six petals : *Style* almost none : *Seeds*
elongated at each end : (*Stam.* hairy. E.)

ORNITHOG'ALUM. *Bloss.* beneath, of six petals : *Filaments*
every other broader at the base.

SCILLA. *Bloss.* beneath, of six petals, deciduous : *Filaments* thread-shaped.

(HYACINTHUS. *Bloss.* beneath, deciduous, limb in six segments, tube swollen : *Stam.* uniform : *Caps.* three-celled : *Seeds* globose. E.)

ASPARAGUS. *Bloss.* beneath, of six petals : (*Berry* three-celled : *Summits* three. E.)

FRITILLARIA. *Bloss.* beneath, of six petals, egg-shaped, with a nectariferous cavity in the base of each.

TULIPA. *Bloss.* beneath, of six petals, bell-shaped : *Style* none : *Seeds* flat. E.)

[Juncus. Polygonum Hydropiper. Hyacinthus, vid. Scilla nutans.]

(4) *Flowers without Petals.*

TAMUS. Flowers barren and fertile on distinct plants : *Calyx* with six divisions.

F. *Style* three-cleft : *Berry* three-celled, beneath : *Seeds* two.

ACORUS. (*Spadix* many-flowered : *Bloss.* six petals beneath : *Caps.* three-celled. E.)

JUNCUS. (*Cal.* of six leaves : *Caps.* three-celled, and three-valved : *Seeds* numerous, horizontal. Sm. E.)

(LUCIOLA. *Cal.* of six leaves : *Caps.* one-celled, and three-valved : *Seeds* three, erect. Sm. E.)

PEPLIS. (*Cal.* twelve-cleft, alternately deeper : *Bloss.* six petals, sometimes wanting : *Caps.* two-celled. E.)

DIGYNIA.

(OXYRIA. *Cal.* of two leaves : *Petals* two : *Seed* one, compressed, winged. Sm. E.)

[Polygonum Persicaria, & Hydropiper. Agrimonia Eupatoria. Scleranthus annuus. Quercus.]

TRIGYNIA.

COLCHICUM. *Cal.* a sheath : *Bloss.* like six petals.

TRIG'LOCHIN. *Calyx* three-leaved : *Bloss.* three petals, concave : *Caps.* opening at the base, (three-valved. E.)

RU'MEX. (*Calyx* three-leaved : *Bloss.* three petals : *Seed* one, triangular. E.)

(SCHEUCHZERIA. *Calyx* none : *Bloss.* six petals : *Caps.* three inflated : *Seeds* solitary. E.)

TOFIEL'DIA. (*Perianth* single, six-partite, petaloid, with a small tripartite *involucre* : *Caps.* three to six-celled, cells united at the base, many-seeded. Hook. E.)

[*Anthericum calyculatum*. *Drosera rotundifolia*, & *longifolia*. *Polygonum viviparum*. *Quercus*.]

HEXAGYNIA.

ARISTOLO'CHIA. *Calyx* none : *Bloss.* one petal, tongue-shaped, entire, (inflated at the base : E.) *Caps.* six-celled, beneath.

[*Alisma Damasonium*.]

POLYGYNIA.

ALIS'MA. *Cal.* three-leaves : *Bloss.* three petals : (*Caps.* several, clustered, distinct, rarely more than single-seeded. E.)

[*Triglochin maritimum*.]

MONOGYNIA.

GALANTHUS.* *Petals*, three, concave : *Nectary* three smaller petals notched at the end : *Summit* undivided.

G. NIVA'LIS.

Dicks. H. S.—(*Hook. Fl. Lond. E.*)—*Jacq. Austr.* 313—*E. Bot.* 19—*Kniph.* 1—*Walc.*—*Clus. i.* 169. 1—*Dod.* 230. 1—*Loh. Obs.* 64. 3—*Ger. Em.* 147—*Park. Par.* 107, *fig. between 6, 7, and 9*—*Ger.* 120. 1—*Matth.* 1245.

Only one pair of leaves, blunt, keeled, glaucous, sheathed at the base. *Stalk* cylindrical, naked, bearing one flower. *Sheath* cylindrical, often

(From γαλα, milk, and ανθος, a flower ; descriptive of its milky whiteness. E.)

cloven at the edge. *Flower* on a fruit-stalk, pendulous, scentless. *Petals* fleshy. *Capsule* three-celled, three-valved. *Fl.* Brit. E.) *Root* bulbous. *Blossom* white, with nine semi-transparent streaks on each petal. *Nectary* white, with green streaks and a green border on the outside.

SNOWDROP. FAIR MAIDS OF FEBRUARY. (Welsh: *Eiriawl*; *Cloch baban*. E.) Orchards, meadows, sides of hedges. At the foot of Malvern Hills, on the right of the road below the camp. Mr. Ballard: where no traces of any buildings or gardens are to be found. Near Cirencester, Gloucestershire. Mr. Arrowsmith. Banks of the Tees, about Blackwell and Conniscliffe, in situations which do not admit of its being the outcast of gardens. Mr. Robson. (Near St. John's Chapel, and at Broad-gate, Barnstaple. Polwhele. Heaton wood; and in the most sequestered situations of Scot's Wood Dean, Northumberland. Mr. Winch. Hedges at Laxfield, in great profusion. Mr. Dawson Turner. Pasture near Kirkstall Abbey, Yorkshire. Rev. W. Wood. Banks of the Skell, near Rip-ton, and Mackershaw woods. Rev. J. Dalton. Pentraeth, Anglesey, among brush-wood south-east of the church. Welsh Bot. On the side of the Ridgeway; and Astley wood, near Stourport. Purton. In a field near Wedgnock Park, towards Warwick. Perry. On the banks of the brook near Chudleigh Rock; and in a field near Moreton, Devon. Rev. J. Pike Jones. Banks about Castlemilk, Glasgow. Hopkirk. Arniston woods, Edinburgh, covering acres. Maughan, in Hook. Scot. E.)

P. Feb.—March.*

LEUCOJUM.† *Bloss.* bell-shaped, with six equal divisions, thicker at the ends: *Summit* undivided.

L. ÆSTIVUM. Sheath many-flowered: style club-shaped.

Curt.—(E. Bot. 621. E.)—*Jacq. Austr.* 203—*Renealm.* 100—*Clus.* i. 170—*Cam. Epit.* 230. 3—*Ger. Em.* 148. 4—*Lob. Ic.* 122. 2—*Dod.* 230. 3.

* (From the mucilage which the roots yield by boiling, Dr. Darwin supposes a nutritious salep might be prepared. By cultivation, the Snow-drop becomes double; but this metamorphosis does not improve the captivating elegance of the universal favourite, the "herald of the infant Spring," "as exhibited in its native simplicity. Among the innumerable poetical effusions which this simple flower has inspired, none is more elegantly descriptive than that of the late excellent Mrs. Barbauld:

"Already now the *Snowdrop* does appear,
The first pale blossom of the unripen'd year;
As Flora's breath, by some transforming power,
Had chang'd an icicle into a flower:
Its name and hue the scentless plant retains,
And Winter lingers in its icy veins."

This "morning star of flowers," pure as the spotless drift from which it seems to take its rise, was dedicated by the Romish church to the Purification of the Virgin Mary.

"The flower that first in the sweet garden smil'd,
To virgins sacred,"

has also been deemed the emblem of Consolation, as by its earliest revival from the death-like repose of winter, cheering mortal man with the assurance of re-animation:

"Then, spirit flower, I'll pluck thy bell,
An offering for my breast;
And when ills come or passions swell,
Thy prophet flowers each storm shall quell
And give it promis'd rest." E.)

† (From λευκος, white, and ιον, a violet. E.)

About a foot high. *Leaves* three quarters of an inch broad, strap-shaped, keeled at the base, as long as the stalk. *Flowers* white, streaked, with a green blotch near the point of each petal. (*Root* bulbous. *Leaves* many. *Flowers* pendulous. *Anthems* blunt, with two little cavities. *Capsule* elliptical, three-celled. *Seeds* globular, large, black. E.)

SUMMER SNOWFLAKE. We are indebted to Mr. Curtis for this elegant addition to the British Flora. He discovered it about half a mile below Greenwich, by the side of the Thames; it has also, he says, been found on the opposite shore in the Isle of Dogs. In a small island, in the river about three miles south of Kendal, on the dam of the gunpowder mill. Mr. Gough. (In pastures at Little Stonham, Suffolk. Mrs. Cobbold. Near Reading. Mr. Murray. Fl. Brit. In a moist meadow at Upton, Bucks, remembered for fifty years by the present tenant of the farm; also in a peat-field near Dorney. Mr. Gotobed, in Bot. Guide. In Renoldson's Mill Dam, near Heaton, Northumberland. Mr. Winch. In great abundance in a meadow bordering Thames Erith, Kent. Fl. Lond. Near Woking, Surry. Salisbury. E.) P. May.*

NARCISSUS.† *Bloss.* superior, of six equal petals, attached to a bell-shaped *nectary*, which conceals the *stamens*.

N. POET'ICUS. Sheath one-flowered: nectary wheel-shaped, very short, membranous, finely scalloped: (leaves bluntly keeled: edges reflexed. E.)

E. Bot. 275 - Kniph. 7, t'c 1st fig.—Dod. 223. 1.

(*Bloss.* large and fragrant. *Leaves* twelve to eighteen inches long, nearly erect, half an inch wide. *Stem* about as tall as the leaves, straight, hollow, two-edged. *Bractea* brown and husky. *Bulb* egg-shaped, with a dark brown skin. E.) *Leaves* rounded on the keel, reflexed at the edge. *Flower* solitary, pure white; nectary bordered with crimson. E. Bot.

(WHITE ONE-FLOWERED DAFODIL. POETIC NARCISSUS. E.) Sandy heathy places. On a rabbit warren at Shorne, between Gravesend and Rochester. At Wood-Bastwick, and other parts of Norfolk. Back of Mount Pleasant, Tunbridge Wells. Mr. J. Woods, jun., in Bot. Guide. Near Haugham, Kent. Rev. J. Lyon ditto. Field at Cove, Suffolk. Mr. W. Jacobson. E.) P. May.‡

* (Mr. Salisbury has observed its noxious herbage so abundant as to overpower the grass in Spring; but no kind of cattle will eat it. The plant is easily propagated, and well adapted to enliven the borders of shrubberies. E.)

† (According to Ovid, derived its name from the contumacious and self-enamoured NARCISSUS, who was changed into this flower; but Plutarch imagines it to be so called from νάρκη (quasi *narcosis*, signifying a privation of sense, as in palsy); the stupor or narcotic effect which it produces on the nerves of those who inhale the odour. E.)

‡ (The celebrated *Narcissus* of the Greek and Roman poets, which they so greatly extol for its beauty and fragrance, appears to have been attractive even to the Gods; Proserpine being occupied during her abode in Sicily, and when carried away by Pluto, in gathering, on the luxuriant plains of Enna,

————— “*Daffodils*,
• That come before the swallow dares, and take
The winds of March with beauty;”

though from the early season above described, our English bard might possibly refer to the more common species. A handsome double variety is sometimes found in gardens; as also others with purple or yellow-cupped flowers. E.)

420 HEXANDRIA. MONOGYNIA. NARCISsus.

N. BI'FLORUS. Sheath two-flowered, nectary wheel-shaped, very short, membranous, finely scalloped: leaves acute on the keel, the edges inflexed.

E. Bot. 276—*J. B.* ii. 604. 1—*Lob. Ic.* 114. 1—*Dod.* 223. 2—*Clus.* i. 156—*Ger.* 110. 6.

(*Bulb* egg-shaped. *E.*) *Flowers* mostly two, sometimes one, and seldom more than three on a stalk, larger than any others that bear many flowers upon a stalk, of a sweet, but sickly scent. *Blossom* pale whitish cream-colour. *Nectary* pale yellow; *Park.* edged with white, crenate. (*Flowers* smaller than those of the preceding: with which it was confounded by Haller and Hudson. *E.*)

PALE DAFFODIL. (PRIMROSE PEEERLESS. *Welsh: Gylfinog deuflodeuog.* *E.*) Meadows and hedges, but rather rare. Fields and sides of woods in the west of England. Gerard. And at a distance from any house.
Ray. Near Hornsey Church. Sherard, in *R. Syn.* At Bellow Hill, near Whitchurch, Cheshire. Mr. Vernon. Several places near Harefield. Blackstone, 58. Near Halifax. Mr. Wood. (About Tunbridge Wells. Banks of the river Wharf, at Thorpe Arch, in plenty. Mr. Knowlton, in *Bot. Guide.* Meadows near Ripton. Mr. Brunton. In a field on the north side of the two mile-stone from Exeter to Starcross. Rev. H. T. Ellicombe. In the parish of Llangadwaladr, and on Pant Howel demesne, Anglesey. *Welsh Bot.* Common in meadows about Dublin. Mr. De Luc. Sm. In fields near Yardly-wood pool, Worcestershire, together with *N. Pseudo-Narcissus.* *E.*) P. May.

N. PSEUDO-NARCIS'SUS. Sheath one-flowered: nectary bell-shaped, upright, curled, as long as the egg-shaped petals.

E. Bot. 17—*Tourn.* 185. *H.*—*Dod.* 227. 1—*Lob. Obs.* 61. 1—*Ger. Em.* 133. 2—*Pcl.* 67. 9—*Sweert.* i. 21. 3—*J. B.* ii. 592. 2—*Trag.* 757—*Ger.* 115. 2.

(*Bulb* nearly globular, blackish. *Leaves* rather glaucous, bluntly keeled, rather flat at the edge. *Flower* pendulous, large, of an unpleasant scent. *Germens* tri-sulcate. *Fl. Brit. E.*) *Stalk* two-edged, (eight to ten inches high. *E.*) *Petals* egg-spear-shaped, straw-coloured. *Nectary* throughout of a full yellow; the margin a little plaited and snipt.

COMMON DAFFODIL. (*Welsh: Gylfinog cyffredin; Croeso gwanwyn.* *E.*) Woods, meadows, sides of hedges, and in orchards. In woods near Erith, Kent. Norfolk. Mr. Woodward. Hanley Castle, Worcestershire. Mr. Ballard. (At Bank Hall, near Liverpool. Dr. Bostock. Pexton Wood, Huntingdonshire. Mr. Woodward. Near Pierce Bridge, Durham. Mr. Winch. Studley and Sambourne, Warwickshire, in great plenty. Perton. Llanedwan, Anglesey, *Welsh Bot.* Meadows in the neighbourhood of Culross. Maughan, in Hook. Scot. Covers almost a whole field beyond Erdington, on the road from Birmingham to Suttor. Abundant in fields near Yardley-wood pool, Worcestershire. Madely, Shropshire. *E.*) P. March—May.*

* (This species and its congeners are most welcome Spring flowers, being hardy and of easy culture, especially the present kind (both double and single), which will without trouble enliven with its gay clusters the garden, the shrubbery, and the grass plat, even under trees.

“ When early Primroses appear,
 And vales are deck'd with *Daffodils*,
 I hail the new reviving year,
 And soothing hope my bosom fills.”

ALLIUM.* Bloss. six petals, expanding: Sheath dry and membranous, many-flowered; umbel crowded: Caps. superior, three-celled.

(1) Stem-leaves flat; umbel bearing capsules.

A. AMPELO'PRASUM. Umbel globular (without bulbs): stamens alternately three-pointed: petals rough on the back.

(E. Bot. 1657. E.)—Clus. i. 190. 1—Dod. 691—Lob. Obs. 79. 1—Ger. Em. 180. 2—Park. 872. 3—J. B. ii. 558,

(Bulbs occasionally becoming very numerous by lateral offsets. Stem upright, cylindrical, leafy at the base. Leaves nearly an inch broad, flat, roughly toothed at the border. Germen egg-shaped. Summit blunt. E.) Filaments three pointed and single pointed alternately. Keel of the petals more or less serrated. Blossoms pale purple. (Scent strong and disagreeable. In herbage this species resembles A. Porrum, the leek, but the nature of the perennial bulbs, as Smith observes, sufficiently distinguishes it. E.)

GREAT ROUND-HEADED GARLIC. (A very rare plant; the only well authenticated British station being the Isle of Steep Holmes in the Severn sea, as remarked by the older Botanists, and where it was observed in abundance by the Editor in 1826. House Holm, Ullswater, and Keswick, have also been named, but Mr. Winch suspects these stations should refer to A. arenarium. E.) P. July.†

(2) Stem-leaves flat: umbel bearing bulbs.

A. ARENA'RIUM. (Umbel compact, spherical; sheath pointless: stamens three-pointed: leaf-sheaths cylindrical: keel of the petals roughish. E.)

Herrick, in his Hesperides, laments their departure in a more serious strain;

“Fair Daffodils, we weep to see
You haste away so soon;
As yet the early rising sun
Hath not attain'd his noon.
We have short time to stay, as you;
We have as short a spring,
As quick a growth to meet decay,
As you, or any thing:
We die,
As your hours do; and dry
Away,
Like to the summer rain,
Or as the pearls of morning-dew,
Ne'er to be found again.”

In Curtis's British Entomology, pl. 98, may be seen a representation of *Microdon clavipes*, a fly whose larva feeds upon the roots of these plants. E.)

* (Probably derived from ἀλῶ, to shun or avoid; the smell being disagreeable to many. E.)

† This is eaten along with other pot-herbs. It communicates its flavour to the milk and butter of cows that feed on it. (The trivial name is supposed to have originated from its being prevalent in the vineyards of some countries; or, as some rather imagine, from ἀμπελος, a vine, and πραος, leeky; alluding to the root and its appendages. E.)

Fl. Dan. 290—(*E. Bot.* 1358. E.)—*Clus.* i. 193—*Ger. Em.* 187. 4—*Park.* 873. 5—*J. B.* ii. 560—*Rupp. Jen. ab. Hall.* 2.

Bulbs and blossoms blue. *Stamens* a little longer than the blossom. *Leaves* narrow, entire at the edge. Linn. *Leaf-sheaths* strongly keeled. *Stem* two to five feet high. *Leaves* three or four, (one-third of an inch broad, E.) the lower ones quickly withering, broad, edges hairy, or rather finely toothed, but the teeth not discernible without a glass. *Bulbs* numerous, deep purple. *Flowers* a few, on short fruit-stalks, small, purple, marked with a deeper line. Woodw. (Of the alternate three-cleft filaments the middle point bears the anther. E.)

SAND GARLIC. Mountains of Westmoreland. Santine's meadow, Castle Howard, Teesdale. Sir James Lowther's woods by Lowther, Westmoreland, and pastures adjacent. Mr. Woodward. About Thorp-arch, Yorkshire, plentiful. Mr. Wood. At Pool Bridge, in Furness Fells. Mr. Jackson. (Castle Eden Dean, Durham; and banks of Tyne at Low Elswick: Dupplin, Perthshire. Mr. Winch. Lowdore Water Fall. Sir T. Frankland. Borders of Ullswater. Mr. James Woods, jun. E.)
P. July—Aug.*

A. CARINATUM. Umbel sheath acute and very long: all the filaments awl-shaped.

(*E. Bot.* 1658. E.)—*Hall. de All.* 2. 2. in *Opusc.* p. 392—*Fuchs.* 738—*Trag.* 748. 3—*Lonic.* 195. 1—*Clus.* i. 193. 2—*Ger. Em.* 187. 5—*H. Ox.* iv. 14. 5—*Suert.* i. 60. 5—*Park. Par.* 143. 3—*Lob. Ic.* 156. 1.

Root scentless. *Stem* about a yard high, slender. *Leaves* a foot long, not half an inch broad. *Sheath-leaves* two, awl-shaped, unequal. *Umbel* of few flowers, but many bulbs. *Blossom* dull brown yellow, often changing to purple. The plant has but little Garlic smell. Haller. (*Flowers* upon long flexuose stalks. E.)

MOUNTAIN GARLIC. Rocks, meadows, pastures. (Sea-mew Crag, at the head of Winandermere. Mr. Gough. E.) Near Long Sleedale, Westmoreland. Dr. Richardson. Near Ramsgate; between Deal and Sandwich. Hudson. (East of Arbroath, and banks of the Isla below Airly Castle. Mr. G. Don. Hook. Scot. E.)
P. June—July.

(3) *Leaves cylindrical; umbel bearing bulbs.*

A. VINEALE. Filaments three-pointed: (leaves cylindrical, hollow. E.)

(*E. Bot.* 1974. E.)—*Dod.* 683. 1—*Ger. Em.* 179. 1—*Pet.* 66. 1—*Park.* 871 1—*Fuchs.* 737—*Lonic.* 196. 1—*Trag.* 748.

Bulbs tapering, bowed back, often running out into long hair-like points, compacted into a close head. (*Bloss.* on rather long foot-stalks, few, erect; petals flesh-coloured, with greenish keels. *Stamens* considerably protruded. E.) *Stem* about two feet high. *Leaves* smooth, slender, very long. *Umbel sheath* of one leaf, broad at the base, terminating in an awl-shaped point, about an inch long, striated with green-lines. *Bulbs* numerous, white. Woodw.

* (On the authority of a writer in *Mag. Nat. Hist.* as a curious instance of viviparous production and retentive vitality, it may be recorded, that the seeds in specimens of this plant which had been kept for two years, were found germinating in the calyx, and some had even put forth their cotyledon. E.)

CROW GARLIC. (Welsh: *Craf gwyllt*. E.) Meadows and pastures. Near Norwich. Mr. Crowe. Huntingdonshire and Derbyshire. Mr. Woodward. (Corn-fields near Chudleigh. Rev. J. P. Jones. In corn-fields about Stockwood, Keynsham, and Queen's Charlton, Somerset. Mr. F. Russell. Anglesey. Welsh Bot. Salisbury Craigs, and Craig-Lockhart. Grev. Edin. E.) P. June—July.*

Var. 2. With a double head of bulbs.

Lob. Obs. 78. 2—*Park.* 871. f. 3—*H. Ox.* iv. 14.

Near Worcester. Stokes. (In the valley, Wick Grounds, Brislington, Somersetshire. E.)

A. OLERACEUM. Filaments undivided: leaves semi-cylindrical, grooved above, roughish, furrowed beneath: (sheath with two very long points. E.)

(*E. Bot.* 488. E.—*Hall. de All.* 1. 2. in *Opusc.* p. 386—*Clus.* i. 194. 1—*Ger. Em.* 188. 6—*H. Ox.* iv. 14. 2—*J. B.* ii. 561. 1. †

Root a solid bulb. Stem two or three feet high, upright, or only a little bent towards the top, smooth, not striated, solid. Leaves hollow. Bulbs egg-shaped, forming a roundish knob; from between these arise several thread-shaped fruit-stalks, each supporting a single flower, which is drooping, cylindrical, but somewhat bell-shaped. Blossom whitish green, with three dark purple streaks on each petal. Very minute white dots, hardly visible to the naked eye, are scattered over the whole plant. Linn. Leaves and leaf-stalks deeply furrowed. Bulbs numerous. Fruit-stalks, some upright. Blossom pale, with purple lines. Germen prism-shaped, hexangular. Style slender, longer than the blossom. The leaves can hardly be called rough. Woodw. Stamens shorter than the petals. (Germen rough at the apex. E.)

WILD GARLIC. (STREAKED FIELD GARLIC. (Irish: *Gairleog Muire*. E.) Meadows, pastures, and amongst corn. Baydales, near Darlington. Mr. Robson. (Borders of Derwentwater. Mr. Dawson Turner. In a field at Fincham, Norfolk. Rev. R. Forby. Banks of the Tyne, below Wylam. Mr. Winch. In a field by Rosall, Warwickshire. Purton. Near St. David's. Mr. J. Stewart. Grev. Edin. E.) Common about Rippon, and other parts of Yorkshire. P. July.†

(4) Leaves from the root; stalk naked.

A. URSTNUM. Stalk triangular: leaves spear-shaped, on leaf-stalks: umbel flat topped.

Dicks. H. S.—E. Bot. 122—*Fl. Dan.* 757—*Fuchs.* 739—*J. B.* ii. 566. 1—*Trag.* 748. 2—*Walc.—Matth.* 560—*Dod.* 683. 2—*Lob. Obs.* 80† 2—*Ger. Em.* 179. 2—*Ger.* 141. 2—*Pet.* 668—*H. Ox.* iv. 15. 15.

(Leaves only one or two, a span long, erect, broad, smooth, ribbed, and reticulated. E.) Flowers large, numerous, white. Bulb oblong, tapering. Sheath egg-shaped, shorter than the fruit-stalks. Petals egg-shaped, ex-

* The young shoots are eaten in salads, or boiled as a pot-herb. (Garlic-tasted butter is extremely unwholesome, producing painful eructations, and disordering the stomach. Barton. E.)

† The tender leaves are very commonly boiled in soups, or fried with other herbs. Cows, goats, sheep, and swine eat it. (The smell of Garlic is so inimical to moles, that, to get rid of them, it is sufficient to introduce a few heads of this plant into their subterraneous walks. Month. Mag. E.)

424 HEXANDRIA. MONOGYNIA. FRITILLARIA.

panding. *Stamens* awl-shaped, equal. *Germen* top-shaped, three-lobed, smooth. E.)

RAMBONS. (BROAD-LEAVED GARLIC. Irish: *Creagh cailleah*. Welsh: *Craf y geifr*. Gaelic: *Creamh*. Woods, hedges, and dry meadows. On Ramps Holm, an island of Derwent-water, so called from being covered with this plant. Mr. Winch. Arniston woods. Greville. Anglesey. Welsh Bot. Spennall and Oversley woods, and on moist ditch banks at Hay House, Castle Bromwich, in great plenty. Purton. East base of Castle Hill, Folkstone. Mr. Gerard E. Smith. By the road side between Axbridge and Cross, Somersetshire. Several pastures near Penn's mill at Erdington, Warwickshire, abound so much with this plant as to be called the Garlic Meadows. Fields about Runcorn, Cheshire. E.)

P. May—June.*

A. SCHENO'PRASUM. Leaves cylindrical, awl thread-shaped, as long as the cylindrical stalk.

Fuchs. 635—*E. Bot.* 2441—*Fl. Dan.* 971. E.) *Trag.* 742. 2—*Lonic.* i. 194. 2—*Dod.* 689—*Kniph.* 8—*Lob. Obs.* 77. 1—*Ger. Em.* 177—*Ger.* 139. 1—*H. Ox.* iv. 14. row 1. 4—*Matth.* 550—*Dod.* 689. 2—*Lob. Obs.* 78. 1.

(About a foot high. *Bulb* cylindrical, slender, matted together. *Umbels* globular, thick, many-flowered, without bulbs. *Sheath* egg-shaped, shorter than the flowers. *Petals* expanding, spear-shaped, white or pinkish, with a purplish rib. *Fl. Brit.* E.)

CHIVE GARLIC. Meadows and pastures. By Fast Castle, on the borders of Berwickshire; and in Westmoreland. Cartmel Fell, in a small rivulet called Chivey Syke. Mr. Jackson. Meadows near Kirby-moor-side, Yorkshire. Mr. Flintoff. (On the basaltic rocks of Walltown, Northumberland. Mr. Winch. E.)

P. June.†

FRITILLARIA.‡ *Bloss.* with six petals, each having a nectariferous bell-shaped cavity at its base: *Stam.* the length of the blossom: *Summit* three-cleft: *Caps.* superior, three-celled.

F. MELEA'GRIS. All the leaves alternate: stem single-flowered: (nectary strap-shaped. E.)

Dicks. H. S.—(*E. Bot.* 622. E.)—*Fl. Dan.* 972.—*Curt.* 218—*Walc.*—*Jacq. Austr.* v. *App.* 32—*Kniph.* 6—*Reuealm.* 146—*Clus.* i. 153. 1—*Ger. Em.* 149. 1—*Ger.* 122. 1—*Clus.* i. 152—*Dod.* 233. 2—*Ger. Em.* 149. 2—*Ger.* 122. 2—*Park. Par.* 41. 2—*Swert.* i. 7. 4.

Root bulbous, solid, small for the size of the plant, throwing out numerous

* An infusion in brandy is esteemed a good remedy for the gravel. Penn. Tour.. 1772, p. 175. Other plants growing near it do not flourish. Cows eat it; but it communicates its flavour to the milk and butter; so as to be very offensive, if not unwholesome, in the spring. (In Khamschatka it is used as a principal antiscorbutic, as well as for culinary purposes, and is gathered in large quantities for winter service. E.)

† It is preferred for early spring salads, and soups, being very hardy and milder than the other species. The roots are considered beneficial to cold, phlegmatic constitutions. E.)

‡ (From *fritillus*, a dice-box; which the form of the blossom may be supposed to resemble; while the specific name *meleagris*, (as also applied to the Guinea-hen, *Numida meleagris*,) is descriptive of its chequered appearance, not unlike that of a chess-board. E.)

fibres beneath, and increasing by off-sets. *Stem* from the side of the root, twelve to eighteen inches high, cylindrical, smooth, curved at the top into an elegant arch. *Leaves* three to five, short, grass-like, half-embracing the stem, alternate, distinct. *Flowers* pendulous. *Fruit* erect. *Stem* much lengthened after flowering. *Petals* oval, the three outer gibbous at the base, the three inner flat, of a dull red, chequered with a deeper colour, without any mixture of green or yellow. Woodw. *Nectary* a fleshy glandular substance connecting the stamens to the petals. (*Petals* inflexed at their points. E.)

FRITILLARY. CHEQUERED DAFFODIL or TULIP. SNAKE'S-HEAD, (from the blossom in an unexpanded state. E.) GUINEA-HEN-FLOWER. Meadows and pastures. Maud Fields, near Ruislip Common, Middlesex; near Bury; Enfield: and in the meadows between Mortlake and Kew. Hudson. (One in particular is called Snake's-head Meadow, from its abounding therein. E.) Between Laxfield and Stirrup-street, Suffolk. Mr. Woodward. In a meadow near Blymhill, Staffordshire, plentifully. Rev. S. Dickenson. Near Leicester. Dr. Arnold. (Abundant about Oxford; in Magdalen College meadow. Baxter. Wroxall Field, Warwickshire. Perry. E.) P. April—May.*

Var. 2. *Fl. alb.* White-flowered.

In great abundance in a meadow on the right of the road leading from Wolsley-bridge to Stafford, not a quarter of a mile from the bridge.

(Roots of the common kind transplanted from Blymhill to the Larches produced a singular variety, with stamens scarcely half the length of the blossom; leaves seven or eight; petals chocolate-coloured without, mottled with green and yellow within, not regularly chequered. E.)

TULIPA.† *Bloss.* six petals; bell-shaped: *Style* none: *Caps.* superior, three-celled.

T. SYLVESTRIS. Flower solitary, somewhat nutant. leaves spear-shaped: stamens hairy at the base: (summit triangular, blunt. E.)

(Hook. *Fl. Lond.* E.)—E. Bot. 63—Loh. *Hist.* 63. 2—ib. *Ec.* 124. 2—Clus. *Hist.* 151. 2—Ger. *Em.* 138. 1—Park. 1342. 2—Fl. Dan. 375.

(*Bulb* egg-shaped, gibbous on one side. *Stem* perfectly simple, upright, cylindrical, smooth, one-flowered, leafy in the middle, tapering at the base, about a foot high. *Leaves* alternate, embracing the stem, spear-shaped, sharp-pointed, keeled, rather glaucous, a span long. E.) *Blossom* large, yellow, sweet-scented. *Petals* spear-shaped, acute; outer ones greenish, with one or two transverse wrinkles at the base; inner ones dull yellow, with a green keel, and the edges hairy towards the bottom. *Filaments* very slender at the base, thicker just above, and surrounded with a fringe of white hairs, under which is found honey. *Antthers* and pollen yellow. *Summit* blunt, neither compressed nor dilated.

Linn.

* (As an interesting spring flower it is well deserving the attention of the florist, often affords beautiful varieties, and may be readily propagated by off-sets. E.)

† (From *tulipán* (a turban); the form of the blossom somewhat resembling that Eastern head-dress. E.)

(WILD TULIP. E.) In old chalk-pits in Suffolk and Norfolk; see E. Bot. in which work it is first adopted as a naturalized plant. (Old chalk-pits at Whipsnade, on the borders of Hertfordshire. Rev. D. Jenks. Top of Muswell Hill, Middlesex. Mr. J. Woods, jun. Old chalk-pits at Carrow Abbey, near Norwich. Mr. Rose. Chalk-pits near St. Peter's Barn, Risby Gate Street, Bury. Sir T. G. Cullum. Bot. Guide. Near Blackwell, Durham. Mr. Winch. About Allesley, and in meadows by the Bourne at Shustock, Warwickshire. Bree, in Purton. Bitton meadows, Gloucestershire, opposite the church. Rev. H. J. Ellicombe. In a field near Hamilton. Mr. Murray; and near Brechin. Mr. G. Don. Hook. Scot. E.) P. April.*

ORNITHOGALUM.† Bloss. six petals, upright, permanent, above the middle expanding: *Filaments*, alternate ones dilated at the base: *Caps.* superior, three-celled.

O. LU' TEUM. Stalk angular, (with one leaf at the bottom, and one or two at the top, E.): fruit-stalks forming an unbranched umbel.

* (Called by gardeners Sweet-scented Florentine Tulip, and much admired for its delicate perfume. When double it is highly prized by florists. The expensive varieties of tulips are mostly derived from *T. Gesneriana* of the Levant, and are not only patronized to an extravagant degree in Holland, but among the Orientalists. A Tulip feast is annually celebrated in the seraglio,—

“Then come the *Tulip* race, where beauty plays
Her idle freaks.”

In Persia the Tulip has ever been deemed symbolical of the tender sentiment, and its presentation declaratory of love. However a bed of these gaudy flowers may dazzle and astonish the beholder, both by collective and individual beauty, they scarcely exceed in elegance our simple native thus improved by Montgomery,—

“Here lies a bulb, the child of earth,
Buried alive beneath the clod,
Ere long to spring, by second birth,
A new and nobler work of God.
’Tis said, that microscopic power
Might through its swaddling folds descry
The infant image of the flower,
Too exquisite to meet the eye.

This, vernal suns and rains will swell,
Till from its dark abode it peep,
Like Venus rising from her shell,
Amidst the spring-tide of the deep.
Two shapely leaves will first unfold,
Then on a smooth elastic stem,
The verdant bud shall turn to gold,
And open in a diadem.

Nor one of Flora’s brilliant race,
A form more perfect can display,—
Art could not feign more simple grace,
Nor Nature take a tint away.

Here could I stand and moralize;—
Lady! I leave that part to thee,—

“Be thy next birth a paradise,—
Thy life to come,—eternity.”

† (Possibly from *ornis*, *ornithos*, a bird, and *γαλα*, milk; though the application is not very obvious; neither the hypothetical etymology referring to the siege of Samaria (Linn. Prælect.), more satisfactory. E.)

(*Hook. Fl. Lond. E.*)—*E. Bot.* 21—*Walc.*—*Kniph.* 1—*Clus.* i. 188. 2—*Dod.* 222—*Lob. Obs.* 72. 3—*Ger. Em.* 165. 2—*Pet.* 66. 12—*Fl. Dan.* 378—*Fuchs.* 169—*J. B.* ii. 622. 1—*Ger.* 132. 2—*Lonic.* 193. 1—*H. Or.* iv. 13. 12—*Suert.* i. 57. 3—*Park. Par.* 137. 7.

Root-leaf generally single, longer than the stem. *Stem-leaves* sometimes three or four, unequal, one much larger than the others. *Fruit-stalk* sometimes solitary. *Petals* in two series, the inner greenish yellow, the outer green. *Woodw.* *Stem* from four to six inches high. *Leaves* fringed with fine white hairs. *Spokes* of the umbel from three to seven, each supporting a single flower. *Rob.* (*Bulb* small. *Stam.* and *Pist.* yellow. *E.*)

YELLOW BETHLEHEM STAR. Moist sandy places, and thickets. Woods on the banks of the Tees near Greta Bridge, and Bignal, Yorkshire. *Mr. Robson.* Near Doncaster, and Kendal. Under Malham Cove. *Mr. Wood.* In a meadow adjoining to the copper mills, Derby. *Mr. Whately.* (*Ship-meadow*, Suffolk. *Mr. Ashby.* Near Pierce Bridge, Durham. *Winch Guide.* In different woods of Scotland: in Oxfordshire and Berkshire. *Fl. Lond.* Auchtertool *Linn.* Maughan, in *Grev.* *Edin. E.*) P. April.*

O. PYRENAÏCUM. Bunch very long: filaments all dilated: fruit-stalks when in flower expanding, equal, but afterwards approaching the stalk.

(*E. Bot.* 499. *E.*)—*Jacq. Austr.* 103—*Clus.* i. 187. 1—*Dod.* 209. 1—*Lob. Obs.* 47. 3—*Ger. Em.* 97—*Ger.* 89—*J. B.* ii. 627. 1—*Park. Par.* 137. 5.

(*Bulb* egg-shaped, whitish. *Leaves* all radical, long spreading, strap-shaped. *E.*) *Stalk* one foot and a half to two feet high. *Fruit stalks* slender. *Flower-scales* membranous at the base, broad, and half embracing the stalk, upwards awl-shaped. *Petals* narrow, expanding, pale yellow within, green without, with whitish margin. *Woodw.* (*Stamens* half their length wider, awl-shaped at the point. *Anthers* vane-like. *Summit* bluntly three-sided. *Fl. Brit. E.*)

SPIKED BETHLEHEM STAR. Meadows and pastures. Near Ashley, between Bath and Bradford; and near Chichester. Near Queen's Charlton, (and in lanes about Stockwood, Keynsham; *E.*) Somerset; and between Bath and Warrminster. *Rev. G. Swayne.* (Keyson Park wood, Bedfordshire. *Rev. T. O. Marsh.* *Fl. Brit. E.*) P. June.†

O. UMBELLATUM. Flowers forming a corymbus: outer fruit-stalks taller than the central ones: (filaments awl-shaped. *E.*)

(*Hook. Fl. Lond. E.*)—*Jacq. Austr.* 343—*E. Bot.* 130—*Ger.* 132. 1—*Dod.* 221. 1—*Lob. Obs.* 72. 2—*Ger. Em.* 165. 1—*Suert.* i. 57. 4.

Fruit-stalks very long, broad. *Flower-scales* large, white, membranous.

* The bulbous roots of all the species are nutritious and wholesome, (though the water in which they have been boiled induces vomiting, a parallel case with the tropical food Cassava. *E.*), and those of this species have been employed for food in a scarcity of provisions. Horses, goats, and sheep eat it. Swine are not fond of it. Cows refuse it. *Sturm* asserts that the expressed juice of the roots is beneficial to children in convulsions; and that roasted in ashes and mixed with honey, the bulbs are useful in healing sores. *Mr. Salisbury* has detached this plant, together with six exotic species, from the genus *Ornithogalum*, and constituted a new genus which he has named after Sir Thomas Gage, Bart. *F. L. S.* vid. *Monograph in Annals of Botany. E.*)

† So abundant in Somersetshire as to be tied up in bunches and exposed for sale in Bath market, by the name of *French Asparagus.* *Mr. Griffith. E.*)

Woodw. *Petals* white, with a broad green streak along the under side. *Filaments* spear-shaped, flat, fleshy; every other broader. *Germen* with six blunt angles. (*Leaves* from the root, strap-shaped, grooved, shrivelled at the end. *Stalk* about a foot high, cylindrical, glaucous, bearing a bunch of six to nine larger flowers, drooping to one side. E.)

COMMON BETHLEHEM STAR. (Welsh: *Seren Fethlehem guffredin*. E.) Woods, meadows, and pastures, in Norfolk. Plentiful in a field near Knaresborough. Mr. Robson. (On Everton Heath, Bedfordshire. Abbot. At Little Stonham, Suffolk. Mrs. Cobbold. Bitton meadows, Gloucestershire, opposite the church. Rev. H. J. Ellicombe. In a wood near Maes y porth, Anglesey. Welsh Bot. Plentiful on the point of land adjoining Teddington lock, near London. Mag. Nat. Hist. i. 83. Near a pond in Godfreys Lammas, Warwick. Perry. E.) P. April—May.*

O. (NU'TANS. Flowers pendulous towards one side: filaments dilated, cohering, bell-shaped, alternate ones longer, and cloven.

Hook. Fl. Lond.—E. Bot. 1997—Jacq. Austr. 301—Fl. Dan. 912—Curt. Mag. 269.

Bulb egg-shaped. *Leaves* all radical, pale, and somewhat glaucous, strap-shaped, channelled, sharp-pointed, twelve to eighteen inches long. *Stalk* solitary, rather taller than the leaves, cylindrical, upright. *Cluster* simple, composed of seven or eight large, greenish, and silvery white flowers. The permanent petals close over the germen, which becomes a roundish membranous capsule. *Bractes* shorter than the flowers. *Seeds* rugged, black. E. Bot. This elegant plant having been described and figured in the Floras of many countries, in nearly similar latitudes with our own, we agree with Sir J. E. Smith, that it ought not to be excluded from the catalogue of British natives; especially when we consider for how long a time, and in how great profusion, it has been observed in the county of Suffolk.

DROOPING BETHLEHEM STAR. Plentiful in the high fields near Bury. Rev. G. Leathes. In Eaton-ford field, Bedfordshire. Sir T. G. Cullum. Middleton, Suffolk. D. E. Davy, Esq.; and near Framlingham in the same county; where the Rev. Mr. Crabbe says it is frequent in orchards and church-yards. Bot. Guide. E.) P. May.†

SCILLA.‡ (*Bloss.* six petals, more or less expanding, shrivelling or deciduous: *Filaments* thread-shaped. E.)

S. AUTUMNALIS. *Leaves* strap-shaped, narrow: flowers in a spike-like corymbus: fruit-stalks naked, ascending, about as long as the flower.

Curt.—E. Bot. 78—Clus. i. 185. 2—Dod. 219. 1—Lob. Obs. 53. 3—Ger. Em. 110. 1—Ger.* 98. 4.

Root bulbous, coated. *Leaves* numerous, much shorter than the stalks, Woodw., (not appearing till after the time of flowering. Hoffmansegg and Link. E.) *Flowers* rather form a bunch than a corymbus; bluish-

* The roots may be roasted like chestnuts, or boiled in water, and are much eaten in the Levant. Poiret.

† (A pretty tribe of plants, several of which are worthy of garden culture, and flourish in a light sandy soil. E.)

‡ (From σκυλλᾶν, to excite or disturb, as an emetic does the stomach. E.)

purple, small. (*Stalk* rarely more than one, about three inches high, cylindrical. E.)

AUTUMNAL SQUILL. Dry pastures. St. Vincent's Rocks, near Bristol; Lizard Point, Cornwall: Blackheath; near Ditton, on Moulsey-Hurst, over against Hampton Court. Common, near Chase-Water mine, Cornwall. Mr. Watt. (On the downs above the cliffs near Torquay. E.)

P. Aug.—Sept.

S. BIFOLIA. Root solid: flowers nearly upright, without floral-leaves: root-leaves two, spear-shaped.

Jacq. Austr. 117—*E. Bot.* 24—*Clus.* 184. 3—*Dod.* 219—*Fuchs.* 837—*Bauh. Hist.* ii. 579. 2. 3—*Pet.* 67. 5.

(*Bulb* egg-shaped. *Flowering-stalk* but little higher than the leaves, upright, cylindrical. *Bunch* inclined to branch. *Flowers* from four to ten on long fruit-stalks. *Leaves* two, rarely three. *Flowers* in a somewhat corymbose cluster, mostly unilateral. *Blossom* blue. *Petals* egg-shaped, spreading. E.)

(**TWO-LEAVED SQUILL.** E.) Introduced in the English Botany on the authority of Buddle's Herbarium in the British Museum; but no particular place of growth is there assigned. (Received from the west of England by Mr. Sims of Norwich. Fl. Brit. E.) P. March—April.

S. VERNA. Corymb hemispherical, of few flowers, furnished with floral-leaves: blossoms bell-shaped: leaves from the root several, strap-shaped, channelled: bulb coated.

Dicks. H. S.—Fl. Dan. 568—*E. Bot.* 23.

(*Plant* four to five inches high. *Leaves* deep green. E.) *Bunch* terminal. *Flowers* from three to six, seldom more, on fruit-stalks. *Petals* egg-shaped, keeled, deep blue. *Anthers* blue. E.) In its wild state the root-leaves are seldom more than two. *Floral-leaves* longer than the fruit-stalks, (membranous. E.)

VERNAL SQUILL. (Welsh: *Screyn y gwanwyn.* E.) Meadows and pastures. Cliffs on the sea shore in Anglesey and Wales; about St. Ives, and other places in Cornwall: received under the name of *S. bifolia*. Hudson. Gloddaeth, Carnarvonshire. Cliffs in the Isle of Man. Mr. Hall. Near Redruth, Cornwall. Mrs. Watt. Near Penzance. (On the rocks near the village of Babicombe, Devon. Rev. J. Pike Jones. Brading, Isle of Wight. Dr. Bostock. Abounding in Iona and Staffa. Lightfoot and Hook. Scot. Sea banks at Gun's Green, near Eyemouth. Mag. Nat. Hist. P. May—June.

(**S. NU'TANS.** Leaves strap-shaped: spike drooping: blossoms pendulous, cylindrically bell-shaped: segments rolled back: floral-leaves in pairs.

E. Bot. 377. E.)—*Curt.* 139—*Clus.* i. 177. 1—*Dod.* 216. 1—*Lob. Obs.* 53. 2—*Ger. Em.* 111. 1—*Ger.* 99. 1—*J. B.* ii. 586—*Walc.—Park. Par.* 125. 5—*Swert.* 13. 1, 2, 3, and 4.

(*Bulb* globular, coated, mucilaginous, but acrid. *Leaves* numerous, channelled, flaccid, springing from the root, their lower half nearly upright, then reflexed. *Flower-stalk* nearly a foot high, cylindrical, succulent, brittle. *Flowers* pendulous, fine blue, sweet-scented, each three parts of an inch

long ; sometimes white or flesh colour. *Stamens*, their lower half united to the petals, thread-shaped. *Germen* egg-shaped, angular, destitute of nectariferous pores. *Style* about the same length, deciduous, except at the very base. *Summit* abrupt. *Juice* slimy, or glutinous.

Forty years ago Dr. Stokes observed, "The Hare-bell appears to me to possess more of the habit, and even structure, of *Scilla* than of *Hyacinthus* ; and at the same early period the Author of this work, impelled by a like conviction, expressed a "wish that Linnæus had arranged this plant under the genus *Scilla* ;" further remarking, in the third Edition of his "Arrangement," that "the blossoms shrivelling, and not falling off, and the ends of the petals being rolled back, seem to constitute the only observable differences." Following these suggestions ; several, though not all the most distinguished Botanists, have so arranged this species ; as was likewise done in our fifth and sixth Editions. During the present month of May, (1826,) we have taken frequent opportunities to examine numerous living specimens, and are thereby confirmed in our decision, both from the absence of the nectariferous pores on the germen, and by the six petals being in every instance absolutely distinct ; which may be most satisfactorily proved by tracing the outer edge of the petal to its base in flowers not fully expanded. Neither would any one, we presume, unconscious of the question, on inspecting the best figures of the Hare-bell, (as that of Curtis, in Fl. Lond.) imagine them to be intended to represent a monopetalous corolla. E.)

HARE-BELL. SQUILL. WILD HYACINTH. (Irish: *Buha Muck*. Welsh: *Burtas y gog* ; *Cenhinen y brain*. *Hyacinthus non-scriptus*. Linn. Huds. Curt. With. Ed. 1, 2, 3, and 4. Hook. Grev. Purt. *S. nutans*. De Cand. Sm. With. Ed. 5, 6, and 7. Woods and hedges, not unfrequent both in England and Scotland. P. May. E.)*

* The fresh roots are poisonous. They may be converted into starch, (or prepared as a substitute for gum arabic. Gray. E.) *Phalaris Plantaginifolia* lives upon this plant. (Much confusion has prevailed respecting the appellations of the favourite Bell-flowers. The present species is the genuine English *Hare-bell* : the little *Campanula*, whose blossom "nods on the summit of a stalk so slender as to appear supported by magic," and which we call the *Heath-bell*, is the *Hare-bell* of Scotland : while the *Hare-bell* of England is the Scottish *Blue-bell*, intimately associated with one of our most popular modern airs. Indeed scarcely less celebrated in song than the famed Hyacinth of the ancients, (a flower no longer to be identified with certainty), is the simple Hare-bell, which with the revival of nature, animates

———"the lone copse, or shadowy dell,
Wild cluster'd."

The term *non-scriptus* was applied to this plant by Dodonæus, because it had not the characters Δ , Δ (the very tokens of grief, as though so impressed by the fatal discus which deprived this favourite of Apollo of life), inscribed on the petals, and therefore could not be *H. poeticus*. The true poetical Hyacinth of the ancients is supposed, by those who hazard a conjecture, to be the Red Martagon Lily, most of which, Mr. Martyn observes, are marked with a darker colour forming the revered symbol,

———"Apollo with unweeting hand,
Whilome did slay his dearly loved mate,
Young *Hyacinth*, the pride of Spartan land ;
But then transformed him to a purple flower."

And Virgil in speaking of the Hyacinth, uses an epithet peculiarly applicable to the Martagon Lily :

———"et ferrugineus Hyacinthos." Georg. 4.

(HYACINTHUS.* *Bloss.* inferior, deciduous; limb in six segments; tube swollen: *Stam.* uniform: *Caps.* three-celled: *Seeds* globose. E.)

(H. RACEMOSUS. Flowers ovate, six-furrowed, the upper ones sessile, barren: leaves strap-shaped, channelled, spreading.

E. Bot. 1931—*Curt. Mag.* 122—*Jacq. Austr.* 187—*Dod. Pempt.* 217—*Ger. Em.* 118—*Lob. Ic.* 107—*Clus. Hist. v.* 1. 181.

Bulb ovate, brown externally. *Leaves* many, deep green, flaccid, and loosely spreading, very narrow, about a span long; channelled above, semicylindrical at the back. *Stalk* solitary, erect, cylindrical, much shorter than the leaves, often brownish. *Cluster* ovate, dense, of numerous, little, drooping, dark blue *flowers*, whose tube is oval, their limb minute and whitish. *Several* of the uppermost are pale, diminutive, and imperfect. *Caps.* with three-rounded lobes. *Seeds* two in each cell. The *flowers* smell like wet starch, sometimes occasioning head-ache and nausea.

STARCH HYACINTH. On a sandy soil at Cavenham, Suffolk. Rev. G. R. Leathes. Near Newbury, Berks. Dr. Lamb. On the earthy ledge of the old city wall, on the north side of Norwich, plentiful.

P. May. Sm. E.)

ANTHERICUM.† *Bloss.* six petals, expanding: *Caps.* oblong, superior, three-celled: (*Seeds* angular. E.)

A. SEROTINUM. (Leaves semi-cylindrical; those on the stem dilated at their base: stem mostly one-flowered. Sm. E.)

Jacq. Austr. App. 38—(*E. Bot.* 793. E.)—*Rây* 17. 1. at p. 474—*J. B.* ii. 665. 1.

I am indebted to J. W. Griffith, Esq. of Garn, near Denbigh, for the following description of this rare and almost inaccessible species.

Plant from four to eight inches high. *Root* a club-shaped, bent bulb, covered with white laminated membranous scales. *Leaves* two, strap-awl-shaped, very slender, bending downwards, often longer than the stalk. *Stalk* with three or four floral-leaves; spear-awl-shaped, the upper ones decurrent, bent inwards, the lower ones sheathing, slanting outwards. *Flowers* from one to four, but most frequently single. *Petals* six, oblong, expanded, permanent, veined, white within, keel dull pink with a tinge of green. *Germen* obscurely triangular. *Summits* triangu-

Confirmed also by a description in Ovid, x. These equally display

“Del languido *Stacinto*, che nel grembo
Porta dipinto il suo dolore amaro.”

Though the Hare-bell be often admitted into our gardens, the expensive varieties which ornament the parterre or the boudoir are derived from *H. orientalis*, of Aleppo and Bagdad, and sometimes obtain a prize of from ten to twenty, or even thirty pounds, for a single bulb, especially the fine kinds produced near Haerlem (of which there are nearly two thousand, and cultivated by the acre), a species of extravagance scarcely justifiable. E.)

* (The name thus applied by the ancient Greeks, as to the flower which sprung from the blood of the beloved of Apollo, when slain by the rival Zephyrus. It may be derived either from *αἶς*, a violet, or *αἶ*, emphatic of grief, and *Cynthus*, a cognomen of Apollo. E.)

† (From *ἄνθος*, a flower, *πρυγῆς*, a wall or precipice. E.)

lar, truncated. (*Herb* smooth, slender. *Petals* scarcely half an inch long, permanent, as are the *stamens*. *Caps.* the size of a pea, membranous. Sm. E.)

MOUNTAIN SPIDERWORT. SAFFRON SPIDERWORT. On high mountains, as Snowdon, and those in the neighbourhood of Llanberis on the west side of Trigvyllchan. Ray. On Crib y Ddresil rocks near Llanberis, in inaccessible situations, rare; also on the most inaccessible rocks above Llyn Idwal, Carnarvonshire, very near Tŷll dû in the greatest abundance. Hudson. Griffith. P. June.

NARTHECIUM.* *Bloss.* six petals, spreading: *Style* almost none: *Caps.* egg-shaped: *Seeds* attenuated at each end: (*Stam.* villose. E.)

N. OSSIFRAGUM.

Dicks. H. S.—(*E. Bot.* 535—*Hook. Fl. Lond.* 139. E.)—*Fl. Dan.* 42—*Clus. i.* 198. 1—*Dod.* 208. 2—*Lob. Obs.* 47. 1—*Ger. Em.* 95. 2—*J. B. ii.* 633. 2—*H. Oc. iv.* 1. 7—*Pet.* 66. 9.

Stem ascending, cylindrical, four to nine inches high. *Root-leaves* strap-spear-shaped, flat, scored; crooked *stem-leaves* lying close to the stem. *Flower-scales*, two to each fruit-stalk, spear-shaped, alternate, concave. *Petals* strap-spear-shaped, a little concave, greatly expanding, greenish on the outside, of a full yellow within. *Filaments* ooily, yellow. *Antthers* scarlet. (*Seeds* remarkably attenuated at each extremity, yet resembling, in their pellucid integument, those of the *Orchis* and *Pyrola*. Hook. E.)

LANCASHIRE ASPHODEL. (Welsh: *Llafn y blatur*. Gaelic: *Ambliocan*. *N. ossifragum*. Huds. With. Sm. Hook. Grev. *Anthracium ossifragum* Linn. *Fl. Dan.* Lightf. Willd. E.) *Asphodelus Lancastriae*. Ger. Em. 96. n. 2. Turf bogs. Dersingham Moor, Norfolk. Mr. Crowe. Bogs to the north, very common. Mr. Woodward. Needwood Forest. Birmingham Heath (since drained and enclosed). Moreton Moors, three miles from Blymhill, Shropshire. Rev. S. Dickenson. Willesboro' Leas, Kent. Mr. Gerard E. Smith. Rubry Hill on the Lickey, Worcestershire. Colleshill Bog. Purton. Abundant on the moors of Scotland. In turbaries, Anglesey, Welsh Bot. On Haldon, Devon. E.† P. July—Aug.†

ASPA'RAGUS.‡ *Bloss.* with six deep divisions, upright; the tops of the three inner petals reflexed: *Berry* superior, three-celled: (*Stigmas* three. E.)

A. OFFICINALIS. *Stem* herbaceous, much branched, cylindrical, upright, without prickles: leaves bristle-shaped, flexible: leaf-scales mostly solitary.

Kniph. 6—*Ludw.* 78—*Fl. Dan.* 505—*Müll.* 55—*Sheldr.* 83—*E. Bot.* 339—*Matth.* 477—*Fuchs.* 58—*Trag.* 222—*J. B. iii.* 726. 1—*Ger.* 949*. 1—*Blackw.* 332—*Clus. ii.* 179—*Dod.* 703. 1—*Lob. Obs.* 458—*Ger. Em.* 1110. 1—*Park.* 454. 3—*Par.* 501. 6—*Lonic.* 141. 2.

* (From *ναρθηκὴ* a medical chest; alluding to its once supposed virtues. E.)

† This herb is believed in Sweden to be noxious to sheep, and has been imagined to soften the bones of animals that feed upon it (whence the trivial name); but these ancient prejudices have been refuted by Linnaeus, in *Fl. Lapp.* E.) Cows and horses eat it. Sheep and swine refuse it.

‡ (The term *ασπαργός*, was originally applied to all tender shoots of plants. E.)

(Crown of the root scaly, as are the annual, hollow stems, about a foot high. Flowers axillary, drooping, small, forming a terminal spike. E.) Stems herbaceous, upright, paniced. Leaf-scales the outer solitary, with two smaller ones within, from between which rise three, and sometimes four or five strap-shaped leaves. This is the case in the upper part of the branches where there are no flowers, but in the lower part a small branch rises in their stead. Fruit-stalks in pairs, limber, jointed, bearing one flower, pendent. Blossom bell-shaped; inner petals longer. Linn. Seeds from one to three. Blossom yellowish green. Berries red, as large as currants. (Barren and fertile flowers sometimes on distinct plants. Few vegetable productions make a more elegant appearance than the full grown Asparagus, with its ripe berries. E.)

(Rev. Hugh Davies describes a var. whose foliage is "invariably procumbent." E.)

ASPARAGUS, corruptly SPARROW-GRASS. SPERAGE. (Welsh: *Gurillon*; *Merllys cyffredin*. E.) Meadows and rocks on the sea coast. Gravesend; and in marshes below Cook's Folly, two miles from Bristol; about Harwich and Greenwich. Ray. Isle of Portland. Hudson. In the salt marshes below King's Weston, near Bristol Stokes. Mullion Island, near the Lizard Point, (and hence the largest pyramidal mass of Serpentine rock, in Kynance Cove, is called Asparagus Island. Guide. On a sandy hillock below Llanfaelog, Anglesey. Welsh. Bot. Links near Gostord. Mr. E. Maughan. Grev. Edin. On the Chesil Bank, and (Pode Harbour. Pultenev. Fens of Lincolnshire. Miller. E.)

P. July.*

CONVALLARIA. *Bloss* six-cleft, deciduous: *Berry* three-lobed. *Stem* triangular. E.)

Blossoms bell-shaped.

* STALKS (Stalks naked, on short peduncles, semi-cylindrical: flowers in a spike, nutant: leaves two. E.)

art. 302—(E. Bot. 103)—*Abbot. Fl. Bed.* p. 76. E.)—*Ludw.* 87—*Kniph.* 10—*Blackw.* 70—*Kniph.* 1.—*Matth.* 87—*Sheldr.* 25—*Fl. Dan.* 854—*Ger.* 331. 2—*Pet.* 44. 7—*Park.* 251. 1—*H. Ox.* xiii. 4. 1—*Ger. Em.* 410. 2—*Dod.* 205. 1—*Lob. Obs.* 87. 1—*Ger. Em.* 410. 1—*Walc.*—*Ger.* 331. 1—*Fuchs.* 241—*J. B.* iii. 531. 3—*T'ug.* 572—*Lonic.* i. 183. 2.

(Leaves elliptical, generally two, radical, three or four inches long, ribbed, stalked. Flowers nine to twelve, unilateral. Fruit-stalks arched. Flower-scales, one at the base of each fruit-stalk, spear-shaped, membranous. Blossom contracted at the mouth; segments reflexed at the edge. Berries red, (as large as currants; but where the roots are allowed to spread, as in native spots, rarely perfected. E.) Blossom white; highly fragrant. Scapes four to six inches long, slender, semicylindrical. E.)

* The young shoots of this plant, in its cultivated state, are universally esteemed for their flavour and nutritious qualities. (The varieties called Gravesend, Battersea, &c. are produced by the difference of soil and manure. A very thick and gigantic kind, but equally agreeable to the palate, has lately been introduced from Switzerland. E.) They impart to water a strong odour. A peculiar species of *Chrysomela*, named after the plant, lives upon it.

† (Generally supposed to be so called from its growing in valleys; though such a designation is far from peculiarly appropriate. E.)

434 HEXANDRIA. MONOGYNIA. CONVALLARIA.

LILY OF THE VALLEY. MAY LILY. Woods and heaths, (preferring shady situations. E.) (Hampstead-heath, Middlesex, as observed by Gerard, and since by various other Botanists. E.) Castle Eden Dean. Mr. S. Robson. Common in moist woods in Craven, Yorkshire. Mr. Caley. Woods in Norfolk. Mr. Crowe. Rowdsey Wood, Cartmel, plentifully. Mr. Jackson. (In Garreg wen wood, near Garn, Denbighshire. Mr. Griffith. In woods at Grange, in Purbeck. Pulteney. Between Bidston and Woodside, Cheshire. Dr. Bostock. In Hay Woods, Warwickshire Bree. Abundant in Shrawley Woods, Worcestershire. Hickman, in Purt. Cooms Wood, Armathwaite, Cumberland. Hutchinson. Westfield, Ashford, Kent. Mr. G. E. Smith. Arniston and Collington Woods. Mr. Maughan. Grev. Edin. E.) P. May.*

* The flowers are highly fragrant, but when dried have a narcotic scent. Reduced to powder they excite sneezing; as an errhine it is still esteemed for relieving disorders of the head. An extract prepared from the flowers, or from the roots, partakes of the bitterness, as well as of the purgative properties, of aloes. The dose is from twenty to thirty grains. A beautiful and durable green colour may be prepared from the leaves by the assistance of lime. Sheep and goats eat it. Horses, cows, and swine refuse it. (In Germany the flowers form an ingredient in cephalic and cordial wine. The distilled water from the flowers was formerly in great repute, (*Aqua Aurea*), as a preventive of infectious distempers, and believed to be beneficial to the nerves. It is generally considered an agreeable perfume. By forcing in pots, this truly elegant flower, with its double white and red varieties, may be rendered available to the drawing room or boudoir, and thus will in the early Spring most agreeably

“Its balmy essence breathe.”

As the emblem of Purity it is peerless even in the garland of lovely May: and

“Then the sweet *Lily of the Vale*
In woodland dells is found,
While whisp'ring winds its sweets exhale,
And waft its fragrance round.”

Apostrophizing the virtue of Humility, Hurdis moralizes thus;

——— “to the curious eye,
A little monitor presents her page
Of choice instruction, with her snowy bells,
The *Lily of the Vale*.
* * * * *
* * * * * “For when the blast
Her sister tribes confounds, and to the earth
Stoops their high heads, that vainly were exposed,
She feels it not, but flourishes anew,
Still shelter'd and secure. And as the storm
That makes the high elm couch, and rends the oak,
The humble *Lily* spares; a thousand blows
That shake the lofty monarch on his throne
We lesser folk, feel not. Keen are the pains
Advancement often brings. To be secure,
Be humble; to be happy, be content.”

However edifying may be our present plant, there is no reason to assimilate it with the *Lily of holy writ*, upon which our Saviour descended to the discouragement of human pride, and to illustrate the futility of worldly grandeur. *Lilium candidum*, the tall majestic *Lily* of our gardens, frequent in Palestine, and by the heathens consecrated to Juno, is conjectured by commentators to have been the plant so distinguished:

“That fair imperial flower,
Which seemed designed for Flora's hand,
The sceptre of her power.” E.)

(2) Blossoms infundibuliform.

C. VERTICILLA^{TA}. Leaves in numerous whorls.

E. Bot. 128—Clus. Hist. i. 277. 1—Lob. Ic. 805. 1—Dod. 345. 2—Ger. Em. 903. 2—Fl. Dun. 86.

(Stem two feet high, angular, naked below. E.) Leaves strap-spear-shaped, glaucous beneath, sessile, mostly verticillate. Fruit-stalks axillary, from one to three drooping flowers on each. Blossom yellow white, nearly cylindrical. (Berry red when ripe; in its unripe state marbled, but never blue. Br. E.)

(VERTICILLATE SOLOMON'S SEAL. E.) In woods. In the Den of Rechip, four miles north-east of Dunkeld, Perthshire, (chiefly towards the head of the Den. First discovered there by Mr. G. Don of Forfar, and not by A. Bruce, Esq. as has been erroneously stated. Mr. Brown.

P. June—Aug.

C. POLYGONA^{TUM}. Leaves alternate, embracing the stem: stem two-edged: fruit-stalks axillary, mostly one-flowered: (filaments smooth. E.)

Kniph. 3—(Hook. Fl. Lond. E.)—Ludw. 47—Fl. Dan. 377—E. Bot. 280—Woodv. 44—Clus. i. 276. 1—Dod. 346. 1—Ger. Em. 904. 3—J. B. iii. 529. 2—Park. 696. 3. fig. 1st.—H. Ox. xiii. 1. 4—Pet. 44. 6—Barr. 711. 1—Blackw. 251. 2—Ger. 756. 1.

(Stem angular, flexuose, twelve to eighteen inches high. Leaves elliptical, broad, ribbed, plaited. Flowers fragrant as those of Hawthorn or Heleotrope, says Smith; E.) sometimes two, on long fruit-stalks, hanging down on the side opposite to the direction of the leaf; white, with a green line running down each segment; segments rather incurved. Berries black. Woodw. (Two important characters by which this plant may more surely be known from its affinity *C. multiflora*, than by any other, are the smoothness of the filaments and the straightness of the style. Hook.: the former distinction was not overlooked by Scopoli. E.)

Var. 2. Solomon's Seal with White Hellebore leaves and a purplish stalk. Ray.

Woods on the north side of the Mendip Hills. *Ib.*

SWEET-SCENTED OR ANGULAR SOLOMON'S SEAL. Fissures of rocks near Wherf and Skipton Yorkshire; rocky part of Syke's Wood, near Ingleton, Yorkshire. Mr. Caley. (Coppices about Alderbury, Wilts. Dr. Maton. Rock near the sea at Tenby. Countess of Aylesford. On rocks at Kylce, a few miles south of Berwick-upon-Tweed. Mr. Winch. On a rock on the south side of Cheddar Cliffs, Somersetshire, above the first wall by the road side: also at the edge of a wood above the road about half way between Wynde Cliff and Tintern. Mr. W. Christy. E.)

P. May—June.*

C. MULTIFLO^{RA}. Leaves alternate, embracing the cylindrical stem: fruit-stalks axillary, one to many-flowered: (filaments covered with soft hairs. E.)

* In a scarcity of provisions, the roots, which abound with mucilage, have been used, among a multitude of other miserable substitutes, for bread. Sheep and goats eat this plant. Horses, cows, and swine refuse it.

(Hook. *Fl. Lond. E.*)—*E. Bot.* 279, (berries inaccurately coloured. *E.*)—*Mill.* 101. 1—*Walc.*—*Fl. Dan.* 152—*Fuchs.* 585—*J. B.* iii. 529. 1—*Lonic.* i. 170. 3—*Clus.* i. 275. 2—*Dod.* 345. 1—*Lob. Obs.* 368. 2—*Ger. Em.* 903. 1—*Park.* 696. 3—*H. Ox.* xiii. 1. row 3. 1—*Pet.* 44. 5—*Blackw.* 251. i. 1. 5. 7—*Trag.* 399—*Matth.* 954—*Ger.* 756. 3.

(*Stem* about two feet high, naked below. *Leaves* ovato-elliptical, large, marked with longitudinal nerves, rather paler than those of the preceding. *E.*) *Fruit-stalks* branched, usually with two flowers above, three lower down, frequently four at bottom, and in gardens more. *Flowers* smaller, and segments more pointed than in *C. Polygonatum*, white, tipped with green. *Berries* when ripe, black. *Woodw.* (*Filaments* rather hairy; whereas in the preceding species they are smooth. *Scop. Carn. E.*) (Mr. Dawson Turner finds this plant with peduncles often bearing only one, and seldom more than two flowers, yet sufficiently distinguishable by its cylindrical stem and the shape of its leaves. *E.*)

Var. 2. *Dwarf English Solomon's Seal.* Ray. Woods in Wiltshire. *Ib.*

COMMON SOLOMON'S SEAL. Woods. Bramdean, Hampshire; Roehill, Kent; about High Wickham, Bucks. Copse at Gorleston, Suffolk. Mr. Wigg. Woods at Bigland Hall, Cartmel, plentiful. Mr. Jackson. In the lane between Stockton and Stainton, Yorkshire. Mr. Robson. (In the pits called Lily Pits, at Bradwell, Suffolk. Mr. Wigg. in Bot. Guide. In Corpus Wood, two miles from Strateley, Berkshire. Baxter, in Purton. In Postling Wood, Kent. Rev. Ralph Price, in Sm. Obs. Woods at Bothwell. Maughan, in Hook. Scot. *E.*) P. May—June.*

ACORUS.† *Spadix* cylindrical, covered with florets: *Bloss.* six petals, naked: *Style* none: *Caps.* three-celled.

A. CALAMUS. Floral-leaf very much longer than the spike.

(*E. Bot.* 356—*Fl. Dan.* 1158—*Bart.* 30. *E.*)—*Ludw.* 34—*Woodv.* 173—*Kniph.* 9 *Leers* 13. 12—*Blackw.* 466—*Clus.* i. 231. 2—*Dod.* 249. 3—*Ger. Em.* 62. 1—*Park.* 140—*J. B.* ii. 734—*H. Ox.* viii. 13. 4—*C. B. th.* 626—*Dod.* 249. 2—*Lob. Obs.* 30. 1—*Ger. Em.* 62. 2—*Clus.* i. 231. 1—*Lob. Obs.* 30. 2.

Spike about three inches long, closely studded with florets set in spiral lines. *Stackh.* *Root* half to one inch diameter, often one foot and a half long or more, sending out numerous long coarse fibres, (powerfully aromatic. *E.*) The old one decays every year, but two young ones shoot out from the crown of it. *Stem* flatted, (rarely so tall as the leaves, which are two or three feet high and nearly an inch broad; *E.*) bordered with a leafy edge, and above the insertion of the spike expanding into a leaf. *Leaves* sword-shaped, sheathing one another, some plaited in a serpentine line. *Spike* proceeding from the edge of the leaf. *Petals* membranous, thin, crowned with a kind of horizontal hat, (pale green. *E.*)

who even goeth so far, as to assert, that "the roote of Salomon's Seale stamped while it is Greene, and applied, taketh away in one night, or two at most, any bruse, blacke or blew spots gotten by falls or women's wilfulness, in stumbling upon their hasty husbands' fists, or such like." p. 758. *E.*)

† (From *ακρη*, the pupil; having been esteemed beneficial in disorders of the eye. *E.*)

MYRTLE FLAG. SWEET-SCENTED FLAG OR RUSH. Banks of rivers with a muddy bottom. River Yare, near Norwich. Hedley in Surry; Cheshire; near Cambridge; Hounslow Heath; near Harefield. River Waveney, near Bungay. Mr. Woodward. River Avon, near Pershore. Mr. Ballard. River at Tamworth. Marshes near Glastonbury

P. May—June.*

TAMUS. Flowers barren and fertile on different plants.

Cal. with six divisions: *Bloss.* none.

F. Style three-cleft: *Berry* three-celled, beneath: *Seeds* two.

T. COMMUNIS. Leaves heart-shaped, undivided.

Mill. Ill.—Blackw. 457—*Giseck.* 22—*E. Bot.* 91—*Dod.* 401—*Lob. Obs.* 344; *Ic. i.* 625. 1—*Ger. Em.* 871—*Park.* 178. 6—*J. B. ii.* 148—*H. Oz. i.* 1. 6—*Ger.* 721. 1—*Mutth.* 1285—*Gars.* 182—*Cam. Epit.* 988.

(*Root* very large, blackish on the outside. *Stems* twining, (extending many feet, slender, decaying annually. *E.*) *Leaves* alternate, varying from kidney to heart, heart-spear, triangular spear-shaped, and even to halberd-shaped. *Blossoms* greenish. *Berries* red.

LADY'S-SEAL. BLACK BRYONY. (Welsh: *Gwinwydden ddû; Afal Adda.* *E.*) Thickets and hedges. (Mr. Winch observes, that on the north bank of the river Wear, above Sunderland, this handsome creeper terminates its long range from as far south as Algiers. *E.*) P. June.†

JUNCUS.† *Cal.* six-leaved: *Caps.* three-celled, three-valved: *Seeds* numerous, horizontal. §

* The roots powdered might supply the place of our foreign species. It is our only native truly aromatic plant. Linn. The powder of the roots has cured agues when the Peruvian Bark has failed. The roots have a strong aromatic smell, and a warm, pungent, bitterish taste. The flavour is greatly improved by drying. They are commonly imported from the Levant, but those of our own growth are fully as good. The Turks candy the root as a prophylactic, and believe them to be a preservative against contagion. Neither horses, cows, goats, sheep, or swine will eat it. (Dr. Sædiaur recommends it either in the form of extract, (dose half a dram), or candied, in dyspeptic cases.—Dr. Barton says, his experience enables him to state that in dyspeptic flatulency, and other disorders of the stomach, and in cholica, it merits the marked attention of physicians. Chewed, and the juice only swallowed, it is a pleasant remedy for indigestion; and when masticated, by stimulating the salivary glands, produces a copious discharge, and relieves the tooth ach. *Veg. Mat. Med. U.S.* The whole plant has been used for tanning leather, and the French snuff *à la violette*, is supposed to be scented by this root.—The Sweet-scented Flag is used for strewing the churches on high festivals in some Catholic countries, nor is the custom altogether obsolete in England. *E.*)

† Though considered a poisonous plant, the young shoots are eaten in the spring, dressed like asparagus. The root is acrid and stipulating: (one of the best diuretics known, and an excellent remedy in calculous obstructions. *Salisbury. E.*) Horses will not eat this plant.

‡ (From *jungo*, to join; alluding to the general utility of several species in binding themselves and other things together, for economical purposes. *E.*)

§ The best method of destroying Rushes, which are apt to overpower more valuable herbage, is to fork them up in July, collect them in heaps for burning, (the ashes affording some little refreshment to the exhausted land,) and, above all, to prevent a fresh growth, by depriving them of their *pabulum vite*, under drain. The different species of *Junci* harbour *Caterpes rufilabris*, *Bryaxis Juncorum*, *Donacia simplex*, *Livia Juncorum*, *Chermes graminis*, *Acerus gymnopterorum*, and several *Cocci. E.*)

(1) *Leaves none.**

(*J. ACUTUS*. Stem naked, sharp-pointed: panicle aggregate, near the summit: bractea spinous: capsule twice as long as the calyx, roundish, with a blunt point.

E. Bot. 1614—*Barr.* 203. 2—*C. B. Pr.* 21. 2—*Th.* 173—*Park.* 1193. 4—*H. Ox.* viii. 10. 15.

Stems three or four feet high, (in Ireland seven or eight according to Dr. Wade,) erect, straight, simple, round, smooth, leafless, stiff, and very strong, with a sharp rigid point, turned somewhat aside by the panicle, and rising a little above it. *Leaves* none, though the barren stems have been taken for such. *Panicle* compound, and repeatedly subdivided, from a lateral sheathing cleft, near the top of each stem, corymbose, many-flowered; its *branches* smooth, obtusely compressed. *Bractea* resembling the point of the stem, which embraces it at the bottom, but smaller, and more spreading: *inner ones* several, still smaller, tapering, with membranous points. *Fl.* partly capitate. Three inner *calyx-leaves* obtuse. *Stam.* broad and short. *Style* scarcely any. *Caps.* broadly ovate, hard, brown, sharp-pointed, with three blunt angles, and in the upper part as many intermediate depressions; its lower half invested with the withered *calyx*. *Seeds* ovate, pellucid. *Tunic* unilateral, elongated at each end.

GREAT SHARP SEA RUSH. On the sea coast in deep sand. Coast of Merionethshire. Ray. At Brancaster, Norfolk. Mr. Crowe. Holker, Lancashire. Mr. Woodward. Instow, Devon, and Brawnston Burrows. Bp. Carlisle. Between Sandwich and Pegwell, Kent, by the road side. Mr. Gerard E. Smith. In the county of Wicklow. Dr. Wade.

P. July. E.)

(*J. MARITIMUS*. Stem naked, sharp-pointed: panicle proliferous, near the erect summit: bractea spinous: capsule oblong, the length of the calyx.

E. Bot. 1725—*H. Ox.* viii. 10. 14.

Smaller and more slender than *J. acutus*, with more of a glaucous hue. *Panicle* and *bractea*, as well as the summit of the stem, more erect; the *bractea* much shorter in proportion, and the main branches of the *panicle* more unequal. *Calyx-leaves* acute, with a membranous wavy border, often jagged towards the point. *Caps.* much smaller than the last, of an oblong, prismatic figure, not at all ovate or rounded, and not projecting beyond the calyx.

LESSER SHARP SEA RUSH. Welsh: *Morfrwynen*. *J. maritimus*. Bicheno. Sm. *J. acutus* β. Linn. Huds. With. Willd. Along with the preceding, but much more plentiful. Salt marshes, Essex, and Wales. Ray. Lancashire. Rev. W. Wood. Near St. Andrews. Mr. J. Mackay. About Burnham and Holkham, Norfolk. Near Seaton, Durham. Mr. Winch.

P. Aug. E.)†

* (In availing ourselves of the more recent illustrations of the intricate Genera of *Juncus* and *Luciola*, especially of Mr. Bicheno's observations, (Linn. Tr. v. xii.) it may be well to state that the original specimens of that acute investigator are deposited in the museum of the Linnean Society, for future reference. E.)

† (Useful, with the last, in binding the loose sands of the shore, and preventing the incursions of the sea. E.)

(*J. GLAU'CUS*. Stem naked, straight, glaucous: panicle upright, far below the summit: capsule elliptical, pointed, rather shorter than the calyx.

E. Bot. 665—*Fl. Dan.* 1159—*Leers* 13. 3—*H. Oz.* viii. 10. 13—*Dod.* 605. 3—*Ger. Em.* 35. 4.

Stems rigid and very tough, glaucous, striated, eighteen inches or two feet high, rather more slender than the last; tapering and acute, scarcely pungent, at the summit; sheathed at the base, with large, brown, polished, partly pointed, close scales. *Panicle* generally about half way between the root and the summit, without any external *bractea*, aggregate, with roundish branches of unequal length, nearly upright, cymose. *Calyx-leaves* awl-shaped, pale brown, with a darker keel. *Stamens* six, with long, bright, yellow *anthers*. *Caps.* acutely triangular, elliptical, with a sharp point, scarcely so long as the three shortest, internal, leaves of the *calyx*.

HARD RUSH. *J. glaucus*. Sibth. Bichen. Sm. *J. effusus* β. Huds. *J. inflexus*. Relh. With. Hull. Abbot. Leers. Moist pastures and road sides. P. July.

(*J. CONGLOMERATUS*. Stem naked, straight: panicle dense, globular, far below the summit: capsule abrupt: stamens three.

Fl. Dan. 1094—*E. Bot.* 835—*Leers* 13. 1—*H. Oz.* viii. 10. 7—*Cam. Epit.* 780.

Stems two feet high, quite erect, all generally fertile, grass-green, striated, acute, but not pungent; sheathed at the bottom with close, brown, obtuse scales. *Panicle* more than half way up the stem, bursting from a small, membranous-edged fissure, without a *bractea*, corymbose, very dense, mostly globular. *Calyx-leaves* pointed; the inner ones most membranous, with two ribs. *Stam.* always three only. *Caps.* ovate, strongly triangular, obtuse, with a small point, purplish-brown, polished, about the length of the *calyx*.—*Stems* more soft and pliant than in any of the foregoing. E.)

(Mr. Thomson informs us that the cells of the pith are of a very curious structure: appearing, in a transverse section, like minute heptagonal wheels, or circles divided by rays passing from the centre; and these are evidently filled with air. The pith is surrounded by a cylinder of green parenchymatous matter, in which bundles of spiral vessels run, amidst condensed cellular matter. Mr. Thompson conjectures, that, as the Rush has no leaves, the green parenchymatous tube is intended to perform a function analogous to that of leaves, these organs consisting chiefly of a similar substance. E.)

COMMON RUSH. (Welsh: *Bwynen hellenaid*. E.) Moist situations, in pastures, and by road-sides. P. July.*

(*J. EFFUSUS*. Stem naked, straight: panicle loose, repeatedly compound, very far below the summit: capsule obtuse.

Fl. Dan. 1096—*E. Bot.* 836—*Leers* 13. 2—*Dod.* 605. 2—*Ger. Em.* 35. 1—*H. Oz.* viii. 10. 4—*C. B. Th.* 182.

* Used to make wicks for watch lights, (coated with tallow, "darkness visible:" E.) and the pith for toys. (In Holland the roots are encouraged as giving stability to the banks of rivers and canals. E.)

Stems like the last, but rather paler, very soft and pliable. *Panicle* loose and spreading, very much branched, with a multitude of small green flowers. *Calyx-leaves* finely pointed; the three outermost with a broad obtuse keel; innermost with two distant ribs. *Stam.* usually six; rarely three only. *Caps.* small, obtuse, but rather less abrupt than in *J. conglomeratus*.

SOFT RUSH. SEAVES. Welsh: *Pabwyren*; *Canwyll-frwynen*. Wet pastures and boggy places. P. July. E.)*

(J. FILIFORMIS. Stem naked, thread-shaped, drooping: panicle nearly simple, corymbose, of few flowers, very far below the summit: bractea taper-pointed: capsule almost globular.

Sm. Spicileg. t. 3—E. Bot. 1175—Leers 13. 4—Scheuch. 7. 11—Pluk. 40. 8—Fl. Dan. 1207.

Stems about a foot high, very slender, pliant, light green, drooping or curved above the *panicle*, which is usually situated about the middle, and consists of from five to eight green flowers, not more than two on each stalk, with a taper-pointed *bractea* at the base of the whole. *Calyx* obscurely ribbed. *Caps.* nearly as long as the calyx, tumid, and almost globose, with a small point. There are often a few barren stems. *Stamens* always six.

* Rushes are sometimes used to make little baskets.

(—— “*Viminibus mollique detexere Juncos.*”

In Japan it is cultivated for making mats of a delicate texture. E.) The pith of this and the preceding species is used instead of cotton to make the wicks of candles which are called rush-lights; (for the use of persons of condition numbers were twisted together, to the thickness of a man's arm, or even of a man's middle, says Ware. “These rushes,” according to Mr. White's interesting remarks on rural economy in his Nat. Hist. Selborne, “are in best condition in the height of summer. Decayed labourers, women, and children make it their business (in Hampshire), to procure and prepare them. As soon as they are cut they must be hung into water, and kept there; or otherwise they will dry and shrink, and the peel will not run. At first, a person would find it no easy matter to divest a rush of its peel or rind, so as to leave one regular, narrow, even rib from top to bottom that may support the pith; but this, like other feats, soon becomes familiar even to children; and we have seen an old woman stone blind performing this business with great dispatch, and seldom failing to strip them with the nicest regularity. When these *Junci* are thus far prepared, they must lie out on the grass to be bleached and take the dew for some nights, and afterwards be dried in the sun. Some address is required in dipping these rushes in the scalding fat or grease. The careful wife of the industrious labourer saves the skimmings of her bacon-pot for this use. A little bee's wax or mutton suet mixed with the grease, will give it consistency and make the rushes burn longer. A good rush, two feet four or six inches in length, will burn one hour, and give a good clear light. A pound of dry rushes contains about one thousand six hundred individuals. Supposing each of these to burn half an hour, then a poor man may purchase eight hundred hours of light, a time exceeding thirty three entire days, for three shillings, (the cost of a pound of medicated rushes), or five and a half hours of comfortable light for a farthing!” Rushes are still sometimes strewed over cottage floors, in humble substitution of the mat or carpet, a custom to which our observant Shakespeare repeatedly alludes. The gathering of Rushes has long been a scene of merry making north of the Tweed; affording one of the many occasions in the happier olden time for the joyful assembling of young persons of both sexes together; and hence probably originated the ancient song, &c. of

“Green grow the Rushes, O!”

and the more modern imitation of it by a genuine poet of nature, who lost no opportunity, however homely, of evincing his gallantry. E.) Horses and goats eat these species.

LEAST RUSH. About the margins of lakes in the north : very rare. Near Ambleside. Mr. Newton, in Ray. At Windermoor in Cartmel, Lancashire. Mr. Jackson. Derwent-water, Cumberland. Mr. Winch. On Ben Lawers. Mr. Dickson. P. Aug. E.)

(*J. ARCTICUS*. Stem naked, straight, acute : panicle towards the summit, dense, capitate, of few flowers : bractea shorter than the panicle : capsule oblong, bluntish.

Hook. Fl. Lond. 152—*Fl. Dan.* 1095.

Stems eight to twelve inches high, much stouter than the last, erect, quite smooth, acute, somewhat pungent ; with several obtuse, light brown, sheathing scales at the base. *Panicle* capitate, within little more than an inch of the summit, having a rather membranous, concave, obtuse bractea, longer than the flower-stalks at its base. *Fl.* few, crowded, oblique, with several thin, broad, interior bracteas. *Calyx-leaves* lanceolate, bluntish, of a dark shining brown, with a pale keel. *Caps.* about the same length, oblong, obtuse, with a small point. *Hook. Sm.*

ARCTIC RUSH. Very rare : hitherto only observed by Mr. Drummond, on the sands of Barry, in a low valley near the sea, near Dundee, in great abundance. P. July—Aug. E.)

(2) *Herb leafy.*

(*J. TRIPIDUS*. Stem naked : radical leaves very few : bracteas three, leafy, channelled, with from one to three terminal flowers.

Dicks. H. S.—E. Bot. 1482—*Lightf.* 9. 1—*Jacq. Hort.* 4. 1—*Fl. Dan.* 107—*C. B. Pr.* 22. 2—*Th.* 185. 2.

Stems crowded, erect, slender, thread-shaped, striated, about a span high, naked, except at top and bottom. *Radical leaves* one or two, with a tight sheathing base, very narrow, channelled, acute, nearly upright, much shorter than the stem, frequently wanting ; their sheaths enveloped with several imbricated, membranous scales, of a light shining brown. Bracteas three, rarely but two, at the top of the stem, resembling the radical leaves, though generally longer, nearly erect, dilated, membranous, frequently abrupt or auricled at their base. *Fl.* terminal, one, two, or three sessile or stalked, erect, with two interior membranous brown bracteas. *Calyx-leaves* dark brown, acute, ribbed. *Filam.* very short. *Anth.* linear, oblong. *Caps.* elliptical, pointed, rather longer than the calyx. *Seeds* large, not very numerous.

THREE-LEAVED RUSH. Alpine bogs of Scotland. Mountains about Invercauld, copiously. Mr. Brown. Ben Lawers and Ben-v-Gloe. Mr. Winch. P. July. E.)

(*J. SQUARROSUS*. Stem naked : leaves numerous, radical, channelled : panicle terminal, compound, with cymose branches.

E. Bot. 933—*Fl. Dan.* 430—*H. Ox.* viii. 9. 13.

Root rather woody, with long, stout fibres. *Stems* solitary, erect, about a foot high, simple, naked, smooth, bluntly triangular, a little glaucous. *Leaves* numerous, all radical, somewhat spreading, three or four inches long, rigid, linear, narrow, acute, channelled, smooth, dilated and sheathing at the base. *Panicle* of three or four alternate, cymose ; bracteated, upright branches, with a very few flowers on each. Bracteas membranous, sheathing ; the lowermost with a short leafy point. *Calyx-leaves* lanceolate, of a shining brown ; membranous at the edges ; the keel

ribbed. *Anth.* long, linear. *Caps.* the length of the calyx, polished, obovate, with a small point.

MOSS RUSH. GOOSE CORN. Welsh: *Brwynen Troellgoryn*. Scotch: *Stool-Bent*. On barren sandy heaths in boggy spots. P. June—July. E.)*

(*J. COMPRESSUS*. Stem simple, compressed, leafy below: leaves linear, incurved at the edges: panicle cymose, terminal, shorter than the bractea: capsule roundish, obovate, longer than the obtuse calyx.

E. Bot. 934—*Leers* 13. 7—*J. B.* ii. 522. 3—*Barr.* 114. 1, and 747. 1.

Root not at all bulbous. Stems erect, six to twelve inches high, simple, smooth, round and leafy in the lower part, naked and compressed above. Leaves linear, acute, slightly spreading, channelled with slightly incurved edges, dilated, sheathing and membranous at the base. Panicle compound, with many corymbose, slender, angular, or striated, smooth branches. Bractea leafy, channelled; the principal one erect, rising more or less above the panicle. Fl. numerous, small, pale green. Calyx-leaves concave, obtuse, with a slight keel, and two brown lateral ribs; the inner ones broadest, and rather the shortest. Caps. roundish-obovate, scarcely globose, slightly pointed, longer than the calyx, of a light shining brown.

Smith concurs with Mr. Bicheno in discarding the inapplicable name of *bulbosus* for this species, which originally arose from a misapprehension of synonyms. *Compressus* is suitable, and authorized by Jacquin.

ROUND-FRUITED RUSH. Welsh: *Brwynen algron*. *J. compressus*. Jacq. Enum. Bicheno. *J. bulbosus*. Linn. Huds. With. Willd. Hook. Moist meadows and heaths. Salt water ditches near Yarmouth. Mr. Woodward. (By the Long Walk, Windsor. Rev. Dr. Goodenough. Marshes near Walthamstow. Mr. E. Forster. On the shore of Tyne, below Gateshead Park. Mr. Winch. Rhyl Marsh, Flintshire. Mr. Griffith. E.) P. July—Aug.

(Var. 2. *Carnosus*. Plant darker coloured: panicle longer than the bractea: capsule rarely extending beyond the calyx.

Fl. Dan. 431—*H. Or.* viii. 9. 11—*Barr.* *Ic.* 747. 2.

Sometimes found very diminutive.

MUD RUSH. *J. Carnosus*. Bicheno. Sm. *J. bulbosus* β. Hook. Grev.; which latter authors observe no permanent difference in the capsule. Abundant in salt marshes and muddy places near the sea. E.)

J. GRACILIS. Stem simple, naked: leaves slightly channelled: panicle forked, racemose, shorter than the bractea: calyx-leaves lanceolate, taper-pointed, three-ribbed, longer than the oval capsule.

E. Bot. 2174.

A foot or more high, nearly resembling *J. bufonius*, but really distinct. Stem very slender, naked, somewhat triangular in the upper part. Leaves few, radical, shorter than the stem, erect, linear, narrow, acute; convex and ribbed beneath; channelled, but shallow above; involute when dry;

* Horses eat it. The leaves lying close to the ground elude the stroke of the scythe. It indicates a barren soil. (Mr. Bicheno observes that this plant fully justifies the proverbial worthlessness of the Rush. Lime is recommended for destroying it. E.)

dilated and membranous at the base. *Bracteas* two or three, leafy, erect. *Panicle* of three or four very unequal, rather spreading, branches; the larger ones also forked; the upper part of all racemose. *Fl.* nearly sessile, pale. *Calyx-leaves* lanceolate, taper-pointed, acute, green, three-ribbed, striated, with narrow, white, membranous edges. *Caps.* pale brown polished, oval, or slightly obovate, with a minute point, considerably shorter than the calyx; valves very slightly emarginate. *Seeds* very numerous, pellucid, amber-coloured.

SLENDER SPREADING RUSH. *J. gracilis*. E. Bot. Bicheno. *J. tenuis*. Hook. Scot. *J. Gesneri*. Sm. Eng. Fl. Elevated pastures in Scotland. Dickson. By a rivulet in marshy ground, among the mountains of Clova, Angus-shire, very rare. Mr. G. Don. P. July. E.)

(*J. BUFO'NIUS*. Stem leafy: leaves angular, channelled: panicle forked, racemose, longer than the bracteas: calyx-leaves lanceolate, taper-pointed, membranous, two-ribbed, longer than the oblong capsule.

Dicks. H. S.—*Fl. Dan.* 1098—*E. Bot.* 802—*Leers* 13. 8—*H. Ox.* viii. 9. 14. *Ger. Em.* 4. 4—*Park.* 1190. 8—*Barr.* 263. 1. 2. and 264—*Rose* 2. 5. 6—and *Pet. Gaz.* 51. 7, in its seedling state—*Park.* 1270. 11.

Root fibres downy. *Herb* generally pale green, though sometimes reddish. *Stems* numerous, crowded, three inches to a foot or more in height, somewhat branched, leafy, especially at the lower part. *Leaves* linear, narrow, acute, dilated at the base. *Bracteas*, very slender, erect, much shorter than the *panicle*, which has many greatly elongated branches. *Fl.* nearly sessile, mostly solitary, erect, pale and silvery, with two or three very white pellucid *bracteas* at their base. *Calyx-leaves* green at the back, the margins, beyond the ribs broad, membranous, shining. *Caps.* elliptic-oblong, triangular, reddish-brown, bluntish, generally much shorter than the *calyx*, and always of a much narrower figure than in any of the foregoing.

Bicheno observes that the solitary flowers, and long silky calyx, sufficiently mark this species: like others of its congeners, it is occasionally gemmiparous. Smith states the young plant, in germination, to elevate the seed considerably above ground, so as to look like a moss with capsules, as represented by Mr. Rose, and preserved in Linn. Herb., also vid. Weig. Obs. 36. 2. 7. where it is described as a Cryptogamic production.

TOAD RUSH Welsh: *Brywgen y llyffiant*. Common in marshy ground, or wet gravelly heaths. A. July—Aug. E.)

(*J. ULIGINOSUS*. Stem leafy, bulbous at the base: leaves bristle-shaped, channelled: heads lateral and terminal, about three-flowered: capsule obtuse, rather longer than the calyx.

E. Bot. 801.

Stems two to six inches high, slightly leafy, somewhat branched. *Leaves* setaceous, grooved. Greville remarks, "the flowers are by no means constant to three, nor are they always sessile, some having peduncles as long as the capsule. The length of the *perianth* varies in its relation to the capsule, and the bulbous base of the stem is sometimes scarcely to be traced in the long proliferous variety, which is the most common. Its blunt capsule separates it from *J. lampocarpus* and *acutiflorus*; and besides the diagnostic marks mentioned under *J. supinus* and *subverticillatus*, the opaque chocolate-coloured calyx and capsule are very constant characters." Bicheno. E.)

(Nearly allied to this species is *J. capitatus* of Weigel, said to have been found by Hudson in Jersey; considered by Bicheno as his *J. supinus*; but, according to Smith, the alpine plant of that Botanist, (also Mr. G. Don's *supinus*), is a starved *uliginosus*. The real *J. capitatus* appears to be indigenous to warmer climates; is not addicted to mountainous situations; and has no stronger claim to be admitted into a British Flora, than that of having been observed, nearly a century ago, in a (geographically), French island. E.)

(Var. 2. *J. Uliginosus*. With. Flowering heads foliaceous and viviparous.

H. Ox. viii. 94—*Scheuch.* 7. 10—*Pluk.* 32. 3.

Var. 3. A taller plant; stem-leaves slightly knotted or jointed; flowering heads proliferous.

Fl. Dan. 817.

Bicheno and Smith suspect this may prove a new species, thus characterized as *J. subverticillatus*. Stem leafy, trailing. Leaves bristle-shaped, channelled, very slightly jointed: panicle forked: heads lateral and terminal, about five-flowered, somewhat whorled, capsule obtuse, rather longer than the calyx.

LITTLE BULBOUS RUSH. Welsh: *Corfrwynen ledglymmog*. Frequent, with its varieties, on boggy or turfy heaths. P. June—July. E.)

(J. BI'GLUMIS. Stem erect, unbranched, leafy at the base: leaves flat: head solitary, of two unilateral flowers, surmounted by a leafy bractea.

E. Bot. 898—*Fl. Dan.* 120.

Stems solitary, leafless, quite simple, two to four inches high. Leaves awl-shaped, flattened, slightly channelled; half the height of the stem. No partitions, or joints, are perceptible externally. Fl. two, terminal, one above another and turned to one side, by which this species is always distinguishable from the two-flowered var. of *J. triglumis*, as remarked by Dr. Stuart. Always unilateral, not forced into that position by the bractea. Mr. Brown points out the blunt capsules, and the fruit-stalk with which the inner flower is always provided, as invariable characters. Generally smaller than the following. Seeds remarkably distinguished by their covering.

TWO-FLOWERED RUSH. In bogs on the top of Mal-ghyrddy, a mountain between Glenloch and Glenlyon; and upon Ben Teskerney; both in Breadalbane. (On Craig Cailleach, and on Ben Lawers, in the same situations, but not quite so common as *J. triglumis*. Brown. E.)

P. Aug.

(J. TRI'GLUMIS. Stem erect, unbranched; leafy in the lower part: leaves subulose, compressed: head solitary, terminal, of about three upright flowers, with elliptical bracteas.

Dicks. H. S.—*E. Bot.* 899—*Fl. Dan.* 132—*Lightf.* 9. 2—*Fl. Lapp.* 10. 5—*H. Ox.* viii. 12. 40.

Resembling the last in habit, but about twice as large. Stems four to six inches high. Leaves not flat, as described by some authors, but constructed with cells, (as those of *J. uliginosus*), which, though not externally visible, may be perceived by the touch on drawing the leaf between the

thumb and finger. *Head* usually of three flowers, sometimes two or four, not leaning to one side as in the preceding. *Caps.* chesnut coloured. E.)

(Var. 2. Bractea elongated and acuminate. Brown. E.)

(THREE-FLOWERED RUSH. Boggy summits of high mountains. On Trygvyllchau, near Llanberris, and Llyn y Cwm, near Snowdon: east side of Craig-Cailleach, above Finlarig, Bredalbane, &c. Lightfoot. In the ascent from Llanberris to Glyder, only in one small spot between a little eminence called Bryn bräs and a rivulet called Avon läs. Mr. Griffith. On Ben Lomond, abundant. Dr. Hope. Borrowdale, near Keswick. Mr. Robson. (On Meldon Fells. Rev. J. Harriman. Winch Guide. Helvellyn, and most other mountains about Ambleside. Mr. Bicheno. E.)

P. June—Aug.

(J. CASTA'NEUS. Stem unbranched, leafy: leaves keeled, flat, sheathing at the base: heads terminal, mostly in pairs, many-flowered, with leafy bracteas: capsule twice the length of the calyx.

E. Bot. 900—Fl. Dan. 1332.

Stem upright, from a span to a foot high, cylindrical, leafy. *Leaves* all stem-leaves, alternate, upright, flat, strap-shaped, sharp-pointed; widening below, embracing and sheathing the stem. *Terminal heads* two, one above the other, sometimes only a single one, dark-brown, shining, often four and even six or eight-flowered, rarely three-flowered. *Floral-leaves* one under each flower, a short distance from the calyx, strap-spear-shaped, acute, brown. *Leaflets of the calyx* spear-shaped, acute, with three fibres on the back. *Stamens* six, hair-like, white, as long as the calyx. *Anthers* terminal, strap-shaped, yellowish brown. *Summits* strap-shaped, flat. *Capsule* egg-oblong, blunt, black at the apex, slightly awn-pointed, twice the length of the cup, three-celled. Sm. Structure of the *leaves* internally cellular, (not so in *J. Jacquini*), with distant transverse partitions, but not really knotted or jointed. The *seeds* terminate in a slender appendage at each end, as in *Nartheceum ossifragum*.

This plant most nearly resembles *J. Jacquini*, but on comparison differs in root, stem, leaves, and flowers.

CLUSTERED ALPINE RUSH. In micaceous soil in the mountainous marshes of Scotland. On Ben Lawers. Mr. Dickson. Ben Challum. Rev. Dr. Stuart. Fion Glen, behind Craig Cailleach, Breadalbane. Mr. Borrer. County of Durham. Rev. J. Harriman. P. July. E.)

(J. ACUTIFLORUS. Leaves apparently jointed, slightly compressed: stem without joints: panicle repeatedly forked, dense: calyx-leaves all sharp-pointed, shorter than the taper beak of the capsule.

E. Bot. 238. 2143, at the bottom—H. Or. viii. 9. 1.

Three or four leaves on the stem. *Plant* sometimes three feet high. Davies. *Leaves* very distinctly nodoso-articulate when dry. Hook.

SHARP-FLOWERED JOINTED RUSH. (Welsh: *Brywnen glymmog a blodad blaenfain*. *J. acutifloris*. Ehrh. Davies. Bicheno. Sm. *J. sylvaticus*. Willd. *J. articulatus*. Relh. With. Ed. 4. E. Bot. *J. nemorosus*. Sibth. P. Aug.

This and the two following newly ascertained species are liable, from the attacks of insects, to assume a peculiar appearance, producing bundles of

slender leaves instead of, or intermixed with, the flowers. Thus they are represented in C. B. Pr. 12. 2. and Th. 77—H. Ox. viii. 9. 2. f. 9. E.)*

(J. LAMPOCARPUS. Leaves apparently jointed, compressed: panicle erect, compound, forked: inner calyx-leaves bordered: capsule ovate, coloured, highly polished, longer than the calyx.

E. Bot. 2143—Leers 88. t. 13. f. 6—Fl. Dan. 1097—Leers 18. 6—H. Ox. viii. 9. 2. f. 9, the three right hand straws—C. B. Pr. 12. 1, Th. 76. 2—Park. 1270. 5—Ger. Em. 22. 9—J. B. ii. 521. 2—Ger. 12. 1.

Stem not internally jointed, hollow, bearing from three to six leaves, usually four or five, which are compressed and copiously jointed. Panicle branches strong, elongated, so that the heads of flowers are remote, one above another on each simple branch. Capsule remarkable for its great size, dark chocolate hue, and highly polished surface. E. Bot. and Linn. Tr.

When *J. lampocarpus* happens to flower late in the season, so as not to perfect its large and polished capsules, it may be distinguished by a disposition to become viviparous, and branching at the joints, a property which I never observed in either *J. acutiflorus* or *obtusiflorus*. Rev. H. Davies.

SHINING-FRUITED JOINTED RUSH. (Welsh: *Brwynen glymmog glaer-gib.* E.) Common in moist pastures. Named and characterized as above by Ehrhart, and by Mr. Davies, in Linn. Tr. v. 10. *J. articulatus*. Linn. Willd. *J. articulatus*. var. 1. Leers. With. Ed. 4. *J. compressus*. Relh. Sibth. Abbot. P. June—Aug. E.)

(J. OBTUSIFLORUS. Leaves apparently jointed, cylindrical: stem with internal partitions: panicle repeatedly compound: branches divaricated and reflexed: calyx-leaves obtuse, as long as the capsule.

E. Bot. 2144.

Stem two or three feet high. Easily distinguished by its pale, entangled, much branched panicles, whose ultimate branches are strongly reflexed. Stem and leaves internally jointed. Stem with only two leaves, notwithstanding its tallness. Leaves not compressed. Calyx-leaves with a broad membranous edge. Capsule light brown, shining. E. Bot. and Linn. Tr.

BLUNT-FLOWERED JOINTED RUSH. (Scotch: *Sprett.* Welsh: *Brwynen glymmog a blodau blaendwn.* Gaelic: *Lochan-nan-dav.* E.) First discriminated as a species by Ehrhart abroad, and by the Rev. H. Davies in this country. *J. articulatus* β. Fl. Brit. Ditto var. 5. With. Ed. 4. Not common. Marshes at Limpenhoe, Norfolk. Rev. G. R. Leathes. In Anglesey. Rev. H. Davies. Abundant in ditches in Abercorn Park, near the lower fish pond. Grev. Edin. In boggy ground near Bidford Grange, Warwickshire, in a field opposite Trent's-lane Turnpike, and in a running stream of Mr. Wilkes's, at Broome, near the Field Barn, where it grows luxuriantly. Purton. Profusely in Eastwear Bay, Kent. Mr. Gerard E. Smith. P. Aug. E.)

* (The insects found upon these plants are *Chermes graminis*, *Acarus gymnoterrorum*, and some of the *Coccus* tribe. The diseased plants are very common in the bogs on Birmingham Heath, (now inclosed and drained, E.) and also in those of the New Forest, where the soil is gravelly. E.)

(J. POLYCEPH'ALUS. Leaves apparently jointed, awl-shaped, cylindrical: panicle erect, twice or thrice-forked, with nearly simple branches: heads many-flowered: calyx-leaves lanceolate, acute, rather shorter than the elliptic-ovate bluntish capsule.

This has a very peculiar habit, and differs from all the other species in this division by the very simple ramifications of the panicle, and the few but large heads containing from five to eight spreading flowers, each upon a short stalk.

MANY-HEADED JOINTED RUSH. Highland mountains. Mr. G. Don.
P. Hook. Scot. E.)

(LUCIOLA.* Cal. six-leaved: Caps. one-celled, three-valved:
Seeds three, erect.†

(L. PILOSA. Panicle cymose, widely spreading and reflexed: flowers solitary: capsule obtuse: crest of the seeds hooked. •

E. Bot. 736—Curt. 345—Leers 13. 10—H. Oz. viii. 9. 1—Ger. Em. 19. 2—
Park. 1184. 1—Ger. 17. 1—C. B. Th. 101.

Stem nine to twelve inches high, leafy. Seed with a pale curved appendage at the top, (*coruncula*), as long as the seed itself. Vid. Linn. Tr. v. xii. p. 330. t. 9. f. 1. The peculiar shape of the *coruncula*, observes Mr. Bicheno, will at once enable the Botanist to distinguish this plant from all its congeners, but when that cannot be seen, the divaricate and dark panicle will generally suffice to separate it from *L. Forsteri*; and the solitary flowers prevent it being confounded with other British species.

BROAD-LEAVED HAIRY WOOD-RUSH. (Welsh: *Brwynen flewog*. E.)
L. pilosa. Willd. Bich. Hook. Grv. *Juncus pilosus*. Linn. Huds.
With. Curt. Sm. Leers. In groves, and on broken banks, common.
P. March—April. E.)

(L. FORSTERI. Panicle cymose, erect: flowers solitary: capsule pointed: crest of the seeds straight and obtuse.

Hook. Fl. Lond. 68—E. Bot. 1293.

Root fibrous, black, scarcely stoloniferous. Stems from a span to a foot high, upright, undivided, slender, cylindrical, smooth, leafy. Leaves strap-spear-shaped, sharp-pointed, twice or thrice as narrow as those of *J. pilosus*; hairy at the edge towards the base; the upper ones larger, the root-leaves very small. Panicle terminal, tufted, branched, all the branches upright, never wide apart or bent back. Flowers like those of *J. pilosus*, but the segments of the calyx far more pointed. Capsules egg-shaped, sharp-pointed, not blunt at the end. Fl. Brit. Linn. Tr. v. xii. p. 331. t. 9. f. 2. The leaflets of the perianth are longer and narrower than in *L. pilosa*; the capsules less obtuse, and mostly terminated by the persistent base of the style; to which may be added its slenderer habit and paler colour, especially about the flowers. Hook.

* (So named from a supposed resemblance, when its heads are glistening with dew, to the fly called *Lucciole*, (*lucio*, to shine), of warmer climates, that shines as the glow worm; or, according to Gerard, because the heads of the flowers shine in the night, "wherefore in Italy they call it *Luciola*, quia noctu lucet." E.)

† (The marginal hairs of this genus are singularly constructed; being composed of a number of smaller fibres, which are jointed and twisted; so that upon the application of moisture, in a dry day, as in the awns of *Avena*, they untwist themselves. Bicheno. E.)

A new and very distinct species: continuing unchanged in a garden.

NARROW-LEAVED HAIRY WOOD-RUSH. *L. Forsteri*. De Cand. Bich. Hook. *Juncus Forsteri*. Sm. With. In thickets, especially in calcareous or gravelly soil. In woods under trees between Hoghill and Collier Row in Hainault Forest, Essex, along with *J. pilosus*, first observed by Mr. Edward Forster, jun. In a wood opposite the south front of Hafod House, Cardiganshire. Fl. Brit. About Dorking. Mr. Winch. Fir woods east of Forfar. Mr. G. Don. Hook. Scot. P. May. E.)

(**L. MAX'IMA.** Panicle cymose, doubly compound: flowers and bractes aggregate: capsule pointed: crest of the seeds obsolete.

(*E. Bot.* 737. E.)—*Curt.* 344—*Fl. Dan.* 441—*H. Ox.* viii. 9. row 1. 2. f. 4—*J. B.* ii. 403. 2—*C. B. Pr.* 15. 1, and *Th.* 102—*Park.* 1185. 3—*H. Ox.* viii. 9. row 1. f. 5, between 2 and 3.

Three or four feet high. Root-leaves half an inch or more in breadth, shining. Swayne. (Forms large tufts. Seed vessel smaller in proportion than any of the rest, Bich. Linn. Tr. v. xii. p. 331. t. 9. f. 3. E.) The flowers not being solitary, but mostly in pairs, will readily distinguish between this and the preceding species.

GREAT WOOD-RUSH. *L. sylvatica*. Bich. Sm. *L. maxima*. Willd. Hook. Grev. The modern trivial name being decidedly more appropriate (to the largest species), than the one originally adopted, we consider the preference justifiable. *Juncus sylvaticus*. Huds. Lightf. Curt. With. Ed. ii. Fl. Brit. *J. maximus*. Willd. With. Purt. Woods and hedges, near Hampstead. Whitell Gill, near Askrig, Yorkshire, and at the bottom of the Rye-loaf near Settle. Curtis. Witchery Hole, near Clifton upon Teme, Worcestershire. Mr. Ballard. Common in Scotland, near rivulets and in woods. Mr. Brown; as Roslin, Auchindenny, Braid Hermitage. Greville. Corby Castlg, near Carlisle. Leigh Wood, near Bristol. Mr. Swayne. (Knot's-hole, near Liverpool. Dr. Bostock. E.)

P. May—June.

(**L. CAMPES'TRIS.** Panicle of three or four ovate, dense, partly stalked, clusters: capsule obovate, obtuse, with a small point, shorter than the calyx: seeds stalked, without a crest, leaves flat.

Curt. 140—(*E. Bot.* 672. E.)—*Kniph.* 12—*C. B. Pr.* 13. 2, and *Th.* 103—*H. Ox.* viii. 9. row 1. 4—*Leers* 13. 5—*J. B.* ii. 493. 3—*Ger. Em.* 17. 2—*Park.* 1185. 6—*Ger.* 16. 2.

(Stem four inches or more high. Leaves five-nerved. Flowers ten or twelve together. Seeds reniform: coruncula enlarged at the bottom of the seed, and attaching it to the receptacle. Bich. Linn. Tr. v. xii. p. 334. t. 9. f. 4. E.) Spikes three or four, the central one sessile, the others on fruit-stalks of unequal lengths.

FIELD WOOD-RUSH. (Welsh: *Brwynen flewog y maes*. *L. campestris*. Br. Willd. Curt. Sm. E.) Pastures, meadows, and heaths, common.

P. April—May.

(**L. LI'NIGER.** Leaves flat, hairy: spikes large, compact, more oblong than globular: on long fruit-stalks. Purt.

Purt. Append. t. 9. E.)—*H. Ox.* viii. 9. row 1. f. 1, the left hand corner—*Ger.* 16. 1—*C. B. Th.* 104—*Park.* 1186—*J. B.* ii. 468. 2.

Panicle larger, more compact than in *J. campestris*: spikes globular; straw and leaves as long again. Ray. (This uncommon species, Var. 2. *J. cam-*

pestris of With. Ed. iii. E.) is much more hairy than the preceding, and at the base of the stem the hairiness looks as if some dressed flax adhered to the plant, whence I have named it *liniger*. The leaves are a quarter of an inch broad, but in the preceding not more than half that breadth. The flowers are much more numerous and closely compacted into globular heads, and appear a month later. (Mr. Caley noticed it in three successive years bearing the same characters: he observes that *J. campestris* grows along with it, and attains its height, but is easily distinguished from it by its slender habit, and being destitute of a globular head. Mr. Swayne says it flowers the latest of our leafy-stemmed rushes, and resembles *J. campestris*, but is very distinct. Mr. Teesdale likewise proved this plant to be unaltered by cultivation. E.)

FLAXEN RUSH. (MANY-HEADED BOG WOOD-RUSH. *L. congesta*. De Cand. Forst. Sm. *Juncus liniger*. With. Purst. *J. campestris* β. Linn. Fl. Brit. *L. campestris* β. Bieh. Linn. Tr. Hook. Grev. which latter author thus distinguishes the two varieties of Linn. β. culms taller (than *L. campestris*); flowers collected into a dense roundish head; leaves slightly hairy. *J. sudeticus*. Willd. Turfy bogs. γ. culms taller (do.): spikes less obtuse, on sub-erect peduncles; leaves excessively hairy. *J. liniger*. With. Woods and hedges. E.) Turfy bogs. Shortwood, near Pucklechurch, flowering the latter end of June. Mr. Swayne. (On the side of the road from Coughton to Sambourne, Warwickshire. Purton. On boggy heaths, Northumberland and Durham, frequent. Mr. Winch. E.) P. June.

L. SPICATA. (Panicle dense, compound, oblong, lobed, drooping: capsule elliptical, with a small point: crest of the seeds obsolete: stem-leaves channelled.

Fl. Dan. 270—(*E. Bot.* 1176. E.)—*Fl. Lapp.* 10. 4.

I have seen *J. campestris* growing with it, but they are perfectly distinct. Sm. Well distinguished by its drooping, compound spike. Hook. Five or six inches high. Spike terminal, pointing almost horizontally, about half an inch long.

SPIKED WOOD-RUSH. On bare spots on mountains; often on their summits. (*L. spicata*. Bieh. Hook. Sm. • *Juncus spicatus*. Linn. With. Dicks. Sm. E.) On the summit of Ben Lomond. Sir J. E. Smith. On Ben Bourd near Invercauld; on all the mountains between Angus-shire and Dee side, and on those of Breadalbane and Glenlochail. Mr. Brown. (On Ben Lawers and Ben y Glac. Mr. Winch. Fairfield, near Ambleside. Mr. Joseph Woods. E.) • P. July—Aug.

(L. ARCUATA. Panicle somewhat umbellate, partly compound, with drooping branches: heads globose, of few flowers: bractæ membranous, fringed: capsule elliptical: leaves channelled. Sm.

Hook Fl. Lond. 151—*Wahlenb. Lapp.* 87. t. 4.

Root invested with scaly sheaths. Stem three or four inches high, erect, bearing one or two leaves. Radical leaves numerous, incurved, partially hairy. Stem-leaves with long reddish sheaths. Flowers about three together. Caps. shorter than the calyx, bluntish, with a small deciduous point, originating in the base of the style. Seeds with scarcely any crest. Panicle branches recurved.

CURVED MOUNTAIN WOOD-RUSH. *Juncus arcuatus*. Wahlenb. *L. arcuata*. Hook. Sm. Gathered on the Grampian hills, Cairn-gòrum, Ben-y-Bord,

Ben-y-Macduich, and Brach-reach, on the highest summits, among the comminuted rock, by Mr. Don, and subsequently by Prof. Hooker.

P. July. E.)

BERBERIS. *Calyx* six-leaved: *Petals* six, with two glands to the claw: *Style* none: *Berry* superior, one-celled, opening at the end: *Seeds* two or three.

B. VULGARIS. Fruit-stalks forming pendulous bunches: thorns three together: (serratures of the leaves bristly. E.)

Fl. Dan. 904—*Woodw.* 234—*E. Bot.* 49—*Mill.* 63—*Blackw.* 165—*Fuchs.* 543—*Trag.* 993—*Clus.* i. 120. 2—*Dod.* 750—*Lob. Obs.* 559. 2—*Ger. Em.* 1325—*Park.* 1559—*J. B.* i. 6. 54—*Ger.* 1144—*Lon. Ic.* i. 46. 1.

(A bushy shrub, ten to fifteen feet high; stems pale, spinous. Leaves deciduous. E.) The first leaves inversely egg-shaped, between serrated and fringed, not jointed. Leaf-scales terminated on each side by a hair-like tooth. Stem-leaves alternate, the lowermost somewhat wing-cleft, with thorny teeth; the rest are changed into three-forked thorns. The secondary leaves in pairs, oblong, serrated. Between the lowermost leaves and the thorns are concealed lesser leaves. Thus, when the leaves of the present year are changed into thorns, others will succeed to take place of them in the next. Is there any instance analogous to this? Linn. In searching for the nectaries at the base of the petals when the flower is fully expanded, if the filaments be ever so slightly touched, the anthers immediately approach the summit and burst with an explosion. With. Ed. i. When the anthers are thoroughly ripe, if the base of the filament be irritated with a pin, or a straw, the stamen rises with a sudden spring and strikes the anther against the summit of the pistil, affording a remarkable instance of one of the means used to perform the important office of impregnation. Mr. Whately, from Dr. Sims. See also Phil. Tr. 1788.*

* (This singular vitality of fibre (something more than mere elasticity), which we denominate irritability, and which is particularly apparent in such plants as are called *sensitive*, has also excited the attention of that very ingenious experimentalist Kölreuter, who observes that the cells of the anthers do not split open lengthways, but that the outer coat detaches itself along the edges of the partition, which separates the two cells, and raising itself up with the greater portion of the pollen adhering to the inner surface, finally faces towards the stigma; having the inner surface that fronts the stigma covered with pollen. It is by this beautiful expedient that nature has so completely succeeded in her object of fecundation by the emission of pollen; for by this mode of opening of the anthers the stamens have gained so much in length, that they are enabled to reach with precision the stigma on which they are to discharge their contents; had the cells opened in the usual way, the stamens would have been too short for their intended functions. And here we may well exclaim with Cowley,

“If we could open and inbend our eye,
We all, like Moses, should spy,
E’en in a bush, the radiant Deity.”

When a stamen has gone through this movement, it draws the petal to the base of which it is fixed a little toward itself, and this is the reason why, when we have suddenly stimulated all the stamens of a flower that was before nearly expanded, we see it half closed again. The anthers are insensible to stimulus; the filaments evince most irritability nearest their bases. The phenomenon may be fully induced by a burning lens; and when the flowers are electrified, and sparks are drawn from them by the approach of a metallic body, the stamens immediately spring toward the pistil. For it could happen that during the season of bloom the flowers were to remain uninfluenced by any extraneous stimulus, the stamens would continue extended at their wonted distance from the pistil, and no fecundation could take place. But let us see the means adopted by Divine Wisdom for insuring the fecundation of this useful vegetable. Each petal has near its base two oblong melliferous

Blossom yellow, sometimes streaked with orange. *Berries* red, (a little curved, oblong, very acid. E.)

BARBERRY. PIPPERIDGE-BUSH. Woods and hedges. On Chalk Hills. About Walden, Essex. (Frequent in Norfolk and Suffolk. Mr. Woodward. At the lower end of Loch Tay. Mr. Anderson. Hedges near Chadleigh, Devon. Rev. J. Pike Jones. Road side near Queensferry. Mr. Neill, in Grev. Edin. In Heaton Woods, Northumberland. Mr. Winch. E.) S. May—June.*

glands. Between every two of these glands a stamen is placed, so that whenever an insect (of which abundance present themselves in the course of a day, beetles, flies, bees, and wasps, seeking their own food), attempts to extract the honey exuded by the glands, it must touch, especially the lower and most irritable part of the filament, upon which this organ immediately springs up and proceeds to cover with its prolific dust the upper part of the pistil. *Annals of Botany*, v. 2. A process nearly analogous may be observed in *Aristolochia*, *Orchis bifolia*, and some few other indigenous instances: capriciousness has been long known to afford remarkable exemplification among exotics. E.)

* The leaves are gratefully acid. The flowers are offensive to the smell, when near, but at a proper distance their odour is extremely fine. (Dishes for the table are often garnished with bunches of the ripe berries. E.) They are so very acid that birds will not eat them, but boiled with sugar they form a most agreeable rob or jelly. (Prosper Alpinus states that among the Egyptians they are used in fluxes and malignant fevers, for abating heat, quenching thirst, raising the strength, and preventing putrefaction, macerated and strained off. E.) They are used likewise as a dry sweetmeat, and in angor plums. (In a cultivated state they are sometimes found without seeds. E.) An infusion of the bark in white wine is purgative. The roots boiled in lye, dye wool yellow. In Poland leather is dyed of a most beautiful yellow with the bark of the root. The inner bark of the stem dyes linen a fine yellow, with the assistance of alum.—This shrub should never be permitted to grow in corn lands, for the ears of wheat near it never fill, and its influence in this respect has been known to extend as far as three or four hundred yards. The first information I received upon this subject, was from a scrupulous observer of nature, of whose veracity I could not entertain a doubt. The year following, I examined some wheat sown round a Barberry bush in this gentleman's garden, and found the greater part of the ears abortive.—Knowing a sensible farmer in whose hedge rows the Barberry was a common plant, I enquired if ever he observed the corn near those hedges to be any how particularly affected. His reply constitutes the first part of this paragraph.—(The village of Rollesby, in Norfolk, where Barberries abound, and wheat seldom succeeds, is known by the opprobrious appellation of Mildew Rollesby. This very perplexing effect has been attributed to the farina of the flowers of the Barberry, which is yellow, and resembles in some degree the appearance of the rust, or what is presumed to be the blight in its early state. It is, however, notorious to all botanical observers, that the leaves of the Barberry are very subject to the attack of a yellow parasitic fungus, larger, but otherwise much resembling the rust in corn. Is it not more than possible that the parasitic fungus of the Barberry and that of the wheat may be one and the same species, and that the seed may be, in some instances at least, transferred from the Barberry to the corn? *Annals of Botany*, v. 2. That such an effect is produced, from whatever cause, cannot be doubted. Fifteen or twenty yards of a hedge were composed of Barberry bushes, by direction of the late Duke of Bedford. The wheat was completely blighted, scarcely a single grain being to be found in any ear growing within ten or fifteen yards of that portion of the hedge, contiguous to which the straws were extremely black; and this blackness gradually diminished as the wheat was further removed from the malignant influence of the Barberry. Other facts, equally decisive, are given in "Purton's Midland Flora;" and, according to the personal experience of Dr. Johns, as stated in his ingenious work entitled "Practical Botany," the same conviction is even more prevalent in the United States of America.—The orange-coloured spots frequently apparent on the leaves, and even on parts of the flowers of the Barberry, are occasioned by *Æcidium Berberidis*; "peridia elongated, cylindrical, the mouth furnished with deciduous teeth." Grev. Scot. Crypt. 97: a very different plant from that which has been recently asserted to constitute the Rust in corn. E.)

FRANKENIA.* *Calyx* five-cleft, funnel-shaped: *Petals* five: *Summit* with three divisions: *Caps.* one-celled, three-valved.

F. LÆVIS. Leaves strap-shaped, crowded, fringed at the base.
(*E. Bot.* 205. *E.*)—*Mich.* 22. 1—*Loh. Adv.* 180. 3—*Ger. Em.* 566. 3—*Park.* 1680. 6—*Burr.* 714—*J. B.* iii. 703. 2—*Pet.* 10. 11.

A shrub with numerous branched, trailing *stems*. Leaves (somewhat glaucous, about a quarter of an inch long, *E.*) fleshy, egg-shaped, but the edges being rolled in they appear almost cylindrical with a groove underneath, flattened at the base. *Calyx* with five to seven ribs and as many teeth. *Petals* wedge-shaped, a little scalloped at the end. *Nectary* a fleshy, yellow scale, fixed to the base of each petal. *Style* cloven half way down into three segments. *Blossom* pinky red.

(SMOOTH SEA-HEATH. *E.*) Salt marshes in a muddy soil. Loving-land, near Yarmouth. *Isls* of Sheppey and Thanet; Essex, Sussex, and Kent, common. Near Yarmouth. Mr. Crowe. (At Southwick. Mr. Borrer. On Sunderland Ballast Hills. Mr. Weighell. Winch Guide. *E.*)

P. July—Aug.

F. PULVERULENTA. Leaves inversely egg-shaped, abrupt at the end, mealy beneath.

(*E. Bot.* 2222. *E.*)—*Clus.* ii. 186. 2—*Dod.* 376—*Ger. Em.* 566. 2—*Zanon.* 79—*Loh. Adv.* 196. 2.

Stems lying flat, slender, branching; knots about a finger's breadth from each other. *Leaves* four at a joint, hoary underneath. *Flowers* (pale red, *E.*) in the bosom of the leaves. *Mont.* in *Zanon.* (*Leaves* single ribbed, with very short hairs underneath, edges scarcely rolled in, on short fringed leaf-stalks. *E.*)

DUSTY FRANKENIA. POWDERY SEA-HEATH. (Very rare in Britain. *E.*) Sea coast of Sussex between Bognor and Brighthelmstone. *Dillenius.* Hudson.

A. July.

PEPLIS.† *Calyx* bell-shaped, twelve-cleft, segments alternately smaller: *Petals* six, sometimes absent: *Caps.* superior, two-celled, many-seeded.

P. PORTULA. Flowers often without petals: (leaves opposite, inversely heart-shaped, on stalks. *E.*)

Dicks. H. S.—*Curt.* 288—*Vaill.* 15. 5—(*E. Bot.* 1211. *E.*)—*Fl. Dan.* 64—*Mich.* 18. 1—*Ger. Em.* 614. 11—*Park.* 1260. 4—*J. B.* iii. 372. 3.

(*Stems* numerous, creeping, six to nine inches long, square, often striking root at the joints, branched, slender. *Leaves* glabrous, hardly an inch long, sometimes tapering into leaf-stalks. *Petals* inserted on the calyx, deciduous, very minute; both *blossom* and *filaments* reddish. *E.*)

WATER PURSLANE. (Welsh: *Porpin Troed y gywen.* *E.*) Marshy and watery places, especially such as become dry in summer.

A. July—Sept.

(In *Galpine's Compend.* *Lilium Martagon*, Turk's-cap Lily; Leaves whorled, egg-spear-shaped: flowers reflexed, petals turned back: is said to have been found on the chalk hills near Dorking and Godstone: but we apprehend it can scarcely be considered indigenous. *E.*)

* (Named after John FRANKENIUS, Professor at Upsal, 1659. *E.*)

† (From *πεπλος*, a purple garment, which this flower resembles in colour. *E.*)

DIGYNIA.

(OXY'RJA. *Calyx* two-leaved: *Petals* two: *Seed* one, compressed, winged.

(O. RENIFORMIS.

E. Bot. 910—*Fl. Dan.* 14—*Pluk.* 252. 2—*H. Or.* v. 36. row 3. f. 3—*Pet.* 3. 4.

Stem solitary, erect, a span high, striated, panicle, almost leafless. *Leaves* nearly all radical, on longish *foot-stalks*, kidney-shaped, bright green, somewhat wavy, abrupt, with more or less of a central sinus; ribs all radiating from the insertion of the foot-stalk. *Panicle* erect, branched, twice as tall as the leaves. *Bractees* sheathing, membranous. *Flowers* small, drooping, on capillary, whorled, simple stalks. *Anth.* and *stigma* reddish, as is the wing of the *seed*. *Sm.* Remarkably differing in *leaves* from *Rumex*. *Hook.* Sir J. Hill had the merit of first discriminating this genus.

KIDNEY-SHAPED MOUNTAIN-SORREL. WELCH SORREL. Gaelic: *Stalbhag-namfiadh*. *O. reniformis*. De Cand. *Hook.* *Rumex digynus*. Linn. Huds. Lightf. With. Willd. Gært. Fl. Brit. *Rheum digynum*. Wahlenb. *Acetos rotundifolia*, &c. *R. Syn.* 143. On the summits of lofty mountains of England, Wales, Scotland, and Ireland, abundant. P. July. E.)

TRIGYNIA.

RUMEX.* (*Calyx* three-leaved: *Petals* three, closing: *Seed* one, triangular, inclosed in the valviform leaves of the blossom. E.)

(1) *Flowers* all perfect; *petals* entire, beaded.

(R. ACUTUS. *Leaves* oval-spear-shaped, acuminate: lower ones heart-shaped at the base, with unequal lobes.

Curt. 181—*E. Bot.* 724—*Blackw.* 491—*Kniph.* 3—*Fuchs.* 461.

Stem two to three feet high, angular, furrowed, leafy. *Leaves* varying much in breadth. *Racemes* frequently leafy, but not invariably so; in general structure slender. *Whorls* small, numerous, more or less distant; *flowers* pendulous. *Valves* small.

Var. 1. *Fol. sang.* *Leaves* veined with crimson juice, (as are sometimes those of *R. palustris* and *R. maritimus*) not curled, but occasionally wavy: the lower ones unequally lobed at the base, but not decidedly heart-shaped. Outer valve of the flower bearing a large red tubercle, the other sometimes having a smaller grain. *Bloss.* reddish. *Whorls* small, distant, not so generally leafy.

* (So named by the Romans from a sort of spear, the shape of which the leaves of several species of the present genus nearly resemble. E.)

E. Bot. 1533—*Munt. Brit.* 113; and *Phyt.* 196—*Pet.* 2. 5—*J. B.* ii. 989. 1—*Blackw.* 492—*Dod.* 650. 2—*Lob. Obs.* 154, and *lc.* 1. 290. 1—*Ger. Em.* 390—*Park.* 1226. 10—*H. Ox.* v. 27. 6.

Bloody-veined Dock. Welsh: *Tafolen goch.* *R. sanguineus* of authors, but which, on continued observation during the last season, we cannot perceive to be specifically distinct from *R. acutus*. Woods near Hampstead, but not frequent. Merret. Near Maidstone. Hudson. At Leamington, near Warwick. Perry. Wood above Baron-hill, Anglesey. Welsh Bot. On Headington hill, near Oxford. Sibthorp. In Kingston wood, Cambridgeshire. Relhan. At Lowestoft, Suffolk. Smith. King's Park; Mr. Neill: Abercorn woods; Mr. Maughan: Lochend; Mr. J. Stewart. Grev. Edin. Pointed out to the Editor by Mr. Frederick Russell on the side of a foot path by the high-wall of the church-yard, and adjacent, at Brislington, near Bristol. By the side of the road a few hundred yards before entering Mary-church from Shaldon, Devon.

Var. 2. Herbage bright pale green. This we apprehend to be scarcely a permanent variety, as in the course of a few months we have remarked the one to assume the appearance of the other.

Green-veined Dock. Bloodless Dock. *Pet.* Welsh: *Amrywiaeth, werdd. β viridis.* Sibth. *R. acutus β.* Huds. *Lupathum viride.* Dill. in *R. Syn.* In woods and shady places, more frequent than the former.

SHARP DOCK. Gaelic: *Copagach.* *R. acutus.* Linn. In moist situations, under hedges, and in meadows. P. July. E.)*

R. CRISPUS. Valves strongly veined: leaves spear-shaped, acute, waved and curled at the edge.

Curt. 104—(*E. Bot.* 1998, E.)—*Munt. Brit.* 104; and *Phyt.* 190—*Ger.* 312. 4—*Pet.* 2. 2.

(*Stems* two to three feet high, somewhat flexuose. *Whorls* of numerous, pale green, drooping flowers, rather crowded. E.) *Grains* on the valves very large, nearly round. Woodw. *Root* yellow. *Curt.* *Beads* one or three, rarely two. *St.* *Leaves* strap-spear-shaped. *Valves* large, brown red when ripe; beads pale when young, changing to blood red and then to brown red.

CURLED DOCK. (Welsh: *Tafolen grych.* E.) *Meadows, pastures, road sides, and cultivated ground.* In almost all soils. P. June—July.†

(**R. ALPINUS.** *Petals* one or two, graniferous: leaves ovato-cordate, obtuse, wrinkled.

* Cows and horses refuse it. It is infested by *Aphis Rumicis*. Linn. (also, both this and other species, with *Æcidium Rumicis*, with "capsules pearly white, imbedded in spots of a bright red colour, chiefly on the under side of the leaves." *Purt.* Tab. 26. E.)—The root is used by the dyers. It gives a great variety of shades, from straw colour to a good olive, and a fine deep green to cloths which have been previously blued. Stokes. (The root has long been used in medicine, and considered useful in obstructions of the viscera, and in scorbutic and cutaneous maladies, in which case both internal and external applications of it have been made. *Lewis's Mat. Med.* This is the *Oxylapathum* of the shops; though the roots of other species are too often indifferently substituted. E.)

† In Norfolk it is the pest of clover fields, Mr. Woodward; (but wherever it appears it should be drawn or spudded before the clover becomes too high to walk in. E.)—The fresh roots bruised and made into an ointment or decoction cure the itch. The seeds have been given with advantage in the dysentery.—Cows, goats, and horses refuse it.

Blackw. 262.

Roots very large, irregular, dark brown without; reddish yellow within. *Leaves* few, on long foot-stalks, rugose, nearly as large as those of *rhubarb*. *Plant* rising from two to three feet high; spikes of *flowers* whitish.

ALPINE DOCK. Mountains, rare. Discovered by Mr. G. Don on the Ochill hills, Clackmannanshire, far from any cultivated ground.

B. May—June. Hook. Scot. E.)*

R. HYDROLAPATHUM. Leaves spear-shaped, smooth, acute, very entire, tapering at the base: (permanent petals egg-oblong, nearly entire, unequally tuberculated: whorls rather crowded, almost leafless. E.)

(*E. Bot.* 2104. E.)—*Munt. Brit.* 1; and *Phyt.* 202—*Pet.* 2. 1—*Ger.* 311. 1—*J. B.* ii. 1—*Blackw.* 490.

(*Seed* large, ovate, acute, with thin sharp angles. Sm. E.) *Veins* of the leaves very strong, and nearly perpendicular to the mid-rib. *Root* white within, black without, large, tuberos, very astringent. *Stem* five or six feet high, (when growing on dry land not more than half that height, E.) furrowed. *Leaves* even at the base, a little toothed and waved at the edge; (slightly glaucous, tapering at each end, coriaceous, E.) the *lower* ones twelve to eighteen inches long. *Leaf-stalks* semi-cylindrical, sometimes fifteen inches long. *Fruit-stalks* encompassed a little below the middle with an indistinct ring, in half whorls. *Whorls* from alternate sides of the stem and branches, surrounded by a membranous sheath. *Calyx* one leaf, with three divisions; segments spear-shaped, somewhat concave. *Valves* slightly toothed, especially towards the base. *Teeth* becoming more evident as the seeds ripen. *Beads* greenish white or purplish, not very obvious in the flowering state, though becoming large and conspicuous as the seeds ripen. *Summits* flat, fringed.

(It does not appear that any Botanist has been able satisfactorily to identify *R. pululosus* of Hudson. From the examination of specimens communicated as that plant by the late Mr. Sole, we are inclined to consider it to be no other than our present species in an early stage of maturity. E.)

GREAT WATER DOCK. Irish: *Capog*. Welsh: *Tafolin hir*. *R. Hydrolapathum*. Huds. Sibth. With. Ed. 4. Woodv. Relh. Sm. Purt. (*R. aquaticus*. Lightf. With. Ed. 6. Hook. Fl. Brit. Not of Linn. which has leaves heart-shaped at the base, according to Sm. E.) This gigantic aquatic is found in peat marshes, wet ditches, pools, and sides of large rivers, growing generally in the water where it is shallow. Rare in the North. About Clifton, Worcestershire. Mr. Ballard. Tamworth, at the foot of Bowbridge, on the Coventry road. (In Cors ddygai, and on the banks of the larger rivers, Alaw, &c. Anglesey. Welsh Bot. Side of the Avon, near Bidford; river Arrow, near Alcester. Purton. Between Fowey and St. Austle. Rev. Pike Jones. Near Preston in Skern, and at Polam, Durham. Mr. E. Robson, in Winch Guide. Banks of the Clyde at Old Kilpatrick. Hopkirk. Side of the Tay near Perth. Mr.

* (Grows naturally in the Alps, but has long been cultivated in English gardens, and known by the name of *Monk's Rhubarb*. E.)

Brodie, Hook. Scot. Side of the Avon between Keynsham and Bitton; and in a small pit on the left hand side of the road from Winterbourne to Iron-Acton, Glostershire. E.) P. July—Aug.*

(2) *Flowers all perfect; petals toothed, only one-beaded*

R. PULCHER. Root-leaves fiddle-shaped: (stem smooth, divaricated. E.) (E. Bot. 1576. E.)—H. Or. v. 27. 13—Pct. 2. 10—J. B. ii. 988. 3—Till. Pis. 37, 2.

Stem-leaves egg-oblong, entire, not hollowed out at the sides. *Flowering-branches* reflexed. *Valves* blunt at the end, the outer with a grain; the rest imperfectly tubercled. Linn. *Stem* much branched. *Branches* alternate, with a strap-spear-shaped leaf under each. Woodw. (*Whorls* small, distant, leafy. *Stems* often procumbent. *Radical leaves* on long foot-stalks.

FIDDLE DOCK. Rubbish, dry meadows, and road sides. In Norfolk, very common. Mr. Woodward. Wick cliffs and Mangotsfield near Bristol. Rev. G. Swayne. Opposite the inn at Alveston, Gloucestershire. Mr. Baker. P. July—Aug.

(3) *Flowers all perfect: petals toothed, all beaded.*

(R. MARITIMUS. Upper leaves strap-shaped: lower leaves strap-spear-shaped: whorls leafy.

E. Bot. 725—Fl. Dan. 1208—Pct. 2. 8—J. B. ii. 988. 1.

Stem one to two feet high, sometimes of a tawny red, often flexuose. *Lower leaves* stalked, not undulated. *Whorls of flowers* remarkably crowded together, assuming the appearance of a leafy spike, at length becoming confluent, conspicuous from their rich golden colour. Hooker observes, that this is distinguished from every preceding species by its narrow leaves, and singularly setaceo-spinous, excessively crowded, and bright coloured valves. Each petal exhibits four bristle-like teeth, fully as long as the valve.

GOLDEN DOCK. R. maritimus. Linn. Lightf. Huds. Sm. With. Ed. 6. Willd. Oed. Hook. Grev. R. maritimus β. Huds. and With. Ed. 2. Lappathum folio acuto, flore aureo. Ray. Syn. Bauh. Pin. L. aureum. Pet. R. aureus. With. Ed. 4. Relh. Hull. Abbot. In marshes, but not invariably near the sea. About Crowland, Lincolnshire; near the Trent at Swarston, Derbyshire; and between Hythe and the sea. Ray. Solway Frith, near the Salt-houses at Priestside, Ruthwell. Lightfoot. Severn Stoke, Worcestershire. Mr. Ballard. Sides of Ancot Pool, near Shrews-

* It is a medicine of considerable efficacy, both externally applied as a wash for putrid spongy gums, and internally in some species of scurvy. In rheumatic pains and chronic diseases, from obstructed viscera, it is said to be useful. The powdered root is excellent for cleaning the teeth. The root has sometimes a reddish tinge, which soon changes to a yellowish brown when exposed to the air. *Curculio Lappathi* is found upon the leaves, (which are also subject to *Uredo Rumicis*, small, globose, dusky brown.—This dock is supposed to be the "*Herba Britannica*" of the ancients, celebrated for the cure of cutaneous diseases. The leaves often attain a magnitude secondary only to those of the *Arctium lappa*, or *Tussilago*. E.)

bury. Mr. Aikin. Burntisland, and between Kinghorn and Pettycur.
Mr. Neill, in Grev. Edin. P. July—Sept. E.)

(Var. 2. Flowers fewer, and in more distant whorls; valves less bright in colour, and with shorter setaceous teeth.

Curt. 163—E. Bot. 1932—Lob. Obs. 151. 2; and Ic. i. 286. 1—Ger. Em. 389. 2—Park. 1225. 8—J. B. ii. 987. 2—Pet. 2. 7.

Root without reddish brown, within carmine red. Leaves sometimes found with reddish veins, as those of *R. sanguineus*. Valves green, with two or three fine long teeth on each side. Curt. Stem furrowed, roughish, sometimes tinged with red. Radical leaves large, fully a span long, and three or four inches broad; those intermixed with the flowers strictly linear.

Yellow Marsh Dock. *R. palustris*. Sm. With. Ed. 6. Hook. *R. maritimus*. With. Ed. 3 and 4. Curt. Hull. *Lapathum aurcum*. Dill. in R. Syn. In marshes, ditches, and waste boggy ground, remote from the sea. Tothill Fields, St. George's Fields, and various places about London. Ray, Curtis. By Acle Dam, Norfolk. Mr. Pitchford. At Saham, Norfolk. Sir. J. E. Smith. Sunderland Ballast Hills. Mr. Winch. In Angus-shire. Mr. G. Don, in Hook. Scot.

Smith observes of these two plants, that "the form of the petals, when in seed, is no less permanently distinct, than the number, shape, length and situation of the teeth which border them;" nevertheless, on examining various specimens, we cannot concur in considering them distinct species: an opinion entertained by Prof. Hooker, previously by Rehnan, and also latterly by Mr. Dawson Turner. E.)

R. OBTUSIFOLIUS. Outer valve more decidedly tubercled: radical leaves heart-shaped, obtuse: stem scabrous upwards. E.)

Curt. 168—(E. Bot. 1999. E.)—Lob. Ic. i. 285. 1—Ger. Em. 388. 3—Park. 1225. 4—Pet. 2. 9—Munt. Brit. 68; Phyt. 187—Ger. 312. 3—J. B. ii. 985. 1.

Stem-leaves spear-shaped, pointed. Woodw. Stems about two feet high, furrowed and set with short white transparent bristles. Leaves curled at the edge, ribs downy; the upper heart-strap-spear-shaped, the lower ones oval at the end. Leaf-stalks shorter than the breadth of the leaves. Fruit-stalks sprinkled near the top with white shining globules. Pedicles surrounded near the base by an indistinct cartilaginous ring. Calyx-leaves boat-shaped, nearly as long as the petals. Petals spear-shaped, flat, not very evidently toothed; that with the largest grain outermost when the fruit-stalk bends downwards, and with the longest teeth: none of the teeth equal in length to the diameter of the petal. (Remarkable for its large and broad radical leaves. E.)

BROAD-LEAVED DOCK. (Welsh; *Tafolen gyffredin*. E.) Amongst rubbish, farm-yards, courts, and sides of ditches. P. July—Aug.*

* Fallow Deer eat both this and *R. acutus* with avidity, biting it close to the root, so that it is very rare to see a Dock growing in a deer park: but in other pasture lands few weeds are so troublesome as this most common Dock. (Curtis affirms that it may be destroyed by repeated mowing, though probably the use of the docking-iron will be found a more certain remedy. Its broad leaves were formerly much used for the wrapping up of butter, and hence the plant was called *Butter-Dock*. In the north of England Docks are sometimes boiled as food for pigs. *Apion Rumicis* is found upon this species. E.)

(4) *Flowers dioecious.*

R. ACETO'SA. Leaves oblong, arrow-shaped: (permanent petals tuberculated. E.)

Sheldr. 57—*E. Bot.* 127—*Blackw.* 230—*Woodv.* 69—*Park.* 742, left hand figure;—*Pet.* 3. 1—*Fuchs.* 464—*Trag.* 315—*J. B.* ii. 990. 1—*Matth.* 447—*Dod.* 648. 4—*Lob. Obs.* 155. 1— *Ic.* i. 290. 2—*Ger. Em.* 396. 1—*Park.* 742. n. 1—*H. Ox.* v. 28. row 1. 1—*Ger.* 319. 1—*Munt. Brit.* 174; and *Phyt.* 73—*Lonic.* 88. 2.

(Plant one to two feet high. Stem leafy, striated. Lower leaves stalked. Upper leaves, narrower, sessile. Stipula interior, tubular, membranous, fringed. Clusters erect, whorled, leafless. Fertile flowers the more red. Sm. E.) Leaf-stalks purplish. Blossom reddish. (Lobes at the base of the leaves always pointing backwards. E.)

COMMON SORREL. SORREL DOCK. (Scotch: *The Sowruck.* Irish: *Keiro-gath.* Welsh: *Suran y waun.* Gaelic: *Sealbhaig.* E.) Meadows and pastures. P. June.*

(**R. ACETOSEL'IA.** Leaves spear-halberd-shaped: permanent petals without tubercles. E.)

(*Curt.* 29. E.)—*Blackw.* 307—(*Fl. Dan.* 1161—*E. Bot.* 1674. E.)—*Trag.* 316—*J. B.* ii. 992. 1—*Dod.* 650. 1—*Lob. Obs.* 156. 1— *Ic.* i. 291. 2—*Ger. Em.* 397. 3—*Park.* 744. 13—*H. Ox.* v. 28. 12—*Pet.* 3. 2—*Munt. Brit.* 189. 2; *Phyt.* 76. 2; *Brit.* 182; *Phyt.* 77—*Matth.* 448—*Ger.* 320. 3—*Park.* 744. 15—*H. Ox.* Ib. 11—*Pet.* 3. 4—*Zanon.* 5.

(Not more than half the size of *R. acetosa*, and differs from it likewise in having the segments of the calyx entire and all destitute of grains. Upper leaves mostly lanceolate; lower ones hastate; all turning red in autumn, Sm. especially when growing in a dry sandy soil. E.) The lobes at the base of the leaves point upwards or horizontally; in the preceding species they always point backwards. Flowers reddish.

It is subject to some slight variations in the shape of the leaves, as represented in *Ger.* 321. 6 and 7. and *Ger. Em.* 398. 6.

SHEEP'S SORREL OR DOCK. (Scotch: *Sheep's Sowruck.* Welsh: *Dringol;* *Suran yr yd.* E.) Sandy meadows, pastures, gravel walks.

P. May—July.†

* The leaves, which are powerfully acid, are eaten in sauces and salads. (It is called *Green-sauce*, as Deering says, because "the country people beat the herb to mash, and, mixed with vinegar and sugar, eat it as sauce for roasted meat. E.) The Laplanders use them to turn milk sour. In France they are cultivated for the use of the table, being introduced into soups, ragouts, and fricasees. In some parts of Ireland they are eaten with milk. The Irish also eat them with fish, and other alkaliescent food. The dried root gives out a beautiful red colour when boiled. A salt, sold for Salt of Lemons, is prepared in Germany from the expressed juice of this plant, and is imported into England in considerable quantity. The mucilaginous parts are separated by water mixed with pipe-clay, and two or three crystallizations render the salt sufficiently pure. (Neither horses, cows, goats, sheep, nor swine eat it, unless pressed by necessity. It is a valuable observation, that this and the following species indicate a soil surcharged with acids, requiring lime or other calcareous manure to correct the evil and improve the pasture. E.) *Aphis Acetosa* feeds upon it.

† (Possessed of astringency and acidity like the preceding; but its smaller size causes it to be neglected. E.) *Phalena fuliginosa*, *Atriplicis*, and *Rumicis*, (*Coreus marginatus*, *Aptin violaceum*, E.) and *Meloe Proscarabæus*, are found upon the different species of this genus.

(SCHEUCHZERIA.* *Calyx* none: *Petals* six: *Stigmas* sessile, lateral: *Capsules* three, superior, inflated: *Seeds* one or two: *Anthers* linear. E. Bot. E.)

(S. PALUSTRIS.

E. Bot. 1801—*Fl. Dan.* 76—*Fl. Lapp.* t. 10. f. 1.

Root long, creeping, scaly. *Stems* erect, simple, a span high. *Leaves* few, sheathing, rushy, semi-cylindrical, rising above the top of the stem, mostly radical, each having a pore at its point, (first remarked by Mr. Dalton) through which water oozes when the leaf is compressed. *Flowers* in a simple, terminal, bracteated cluster, greenish brown, small and inconspicuous. *Petals* recurved, equal and uniform, yellowish green. *Stamens* slender and flaccid. *Anthers* brown, vertical, linear, opening at the inner side by two longitudinal parallel fissures. *Germens* ovate, three, (occasionally four, five, or six) with lateral, sessile, oblong, downy *stigmas*. *Capsules* globose, inflated, each containing one or two roundish seeds. E. Bot.

MARSH SCHEUCHZERIA. This very interesting accession to the British Flora, was communicated to Sir J. E. Smith, by the Rev. J. Dalton, the fortunate discoverer, who found this very rare plant, (in 1807), growing abundantly in Lakeby Car, near Boroughbridge, Yorkshire.

P. June. E.)

TOFIELDIA.† (*Cal.* three-cleft: *Pet.* six: *Caps.* three, many-seeded. E.)

T. PALUSTRIS. (Flowers forming an ovate head: stem smooth, thread-shaped, leafless: petals inversely egg-shaped, obtuse: germens roundish. E.)

(*Hook. Fl. Lond.* 100—*E. Bot.* 536. E.)—*Seguier.* 2. 14—*Fl. Dan.* 36—*Clus.* i. 198—*Ger. Em.* 96—*Lightf.* 8. 2. at p. 124—*Fl. Lapp.* 10. 3—*Gmel.* i. 18. 2.

(*Root* woody with long white fibres. *Leaves* sword-shaped, fibrous. *Stem* a span high, upright, simple, nearly naked, cylindrical. *Spike* terminating, solitary, upright, blunt, thick. *Stamens* awl-shaped, smooth, opposite the petals, but scarcely so long. *Anthers* fixed by the side, roundish, heart-shaped, yellow. *Styles* short, distinct. *Summit* blunt. *Seeds* numerous, oval, tawny-coloured. *Fl. Brit.* E.) A small trifid floral-leaf at the base of each flower, resembling a cup. *Lightf.* *Leaves* like grass, (all radical, one to two inches long, ribbed, incurved at the point). *Flowers* small, yellow or greenish.

SCOTTISH ASPHODEL. MARSH TOFIELDIA. (*T. palustris*. Huds. With. Sm. *Hook. Winch.* E.) *Asphodelus Lancastriae* verus. *Ger. Em.* 96. n. 12. *Anthericum calyculatum*. Linn. *Lightf.* Dicks. Oed. Bogs on mountains in Scotland, (and Ireland, E.) Near Berwick. On Glenmore, Ross-shire, and Ben Grihum, Sutherland. About Loch Rannoch, Perthshire. Isle of Rum, and Bidan-nam-bian in Glencoe. (In a bog at the back of Invercauld house, Aberdeenshire, abundant, and with an uncommon luxuriance. Also on several hills about Invercauld, and on the mountains

* (To commemorate the two SCHEUCHZERS, naturalists addicted to alpine plants and grasses: authors of "Itinera Alpina,"—"Agrostographia," &c. E.)

† (So named by Hudson after Mr. TOFIELD, an eminent Botanist of Doncaster. E.)

460 HEXANDRIA. TRIGYNIA. COLCHICUM.

of Breadalbane. Mr. Brown. Near Widdy Bank, on Teesdale Forest. Durham : also at Cronkley Fell, Yorkshire. Mr. Winch. E.)

P. July—Sept.*

TRIGLOCHIN.† *Cal.* three-leaved : *Petals* concave : *Style* none : *Caps.* opening at the base, (with three valves. E.)

T. PALUS'TRE. Capsule three-celled, nearly strap-shaped ; (tapering at the base : root fibrous. Sm. E.)

(*Hook. Fl. Lond.* 98—*E. Bot.* 366. E.)—*Fl. Dan.* 490—*Leers.* 12. 5—*Trag.* 679—*H. Or.* viii. 2. 18—*J. B.* ii. 308. 2—*Ger.* 18. 1—*C. B. Th.* 81—*Ger. Em.* 20. 1—*Park.* 1279. 10.

Stamens, three within the leaves of the calyx, and three within the petals. Hollef. The pointed valves of the *capsule* (separating, not opening, E.) at the bottom, give it the appearance of the head of a three-barbed arrow. *Flowers* in a long, slender, terminating spike, greenish, small, pedunculated. (*Leaves* all radical, a span in length, erect, flexuose, fleshy, linear, semi-cylindrical, above slightly carinated, below sheathing. *Scape* not unfrequently a foot high, erect, flexuose, between round and compressed. Hook. Roth denies the existence of a corolla in this genus, and thinks that what are here called petals, are merely parts of a calyx of six leaves. E.)

MARSH ARROW-GRASS. (Welsh : *Saethbenig y gors.* E.) Wet meadows and pastures, not uncommon. (Bootle, near Liverpool. Dr. Bostock. Torquay, Devon. Rev. Pike Jones. Turbaries, in Anglesey. Welsh Bot. Above the village of Great Alne, Warwickshire ; in boggy ground, Peck-enham, Warwickshire. Purton. E.) Near Tamworth.

P. July—Aug.‡

T. MARITIMUM. Capsule six-celled, egg-shaped.

(*Hook. Fl. Lond.* 99. E.)—*Fl. Dan.* 306—*E. Bot.* 255—*Ger.* 12. 2—*C. B. Th.* 82—*Park.* 1278. 9—*H. Or.* viii. 2. 19—*J. B.* ii. 508. 1.

Leaves slender, semi-cylindrical. *Spike* from four to twelve inches long : greenish. (The *capsules* do not separate from the base, and continue suspended by their upper part, as in *T. palustre*. Hook.) (Resembling the former species, but larger, the leaves broader and more fleshy. *Capsule* shorter. E.)

SEA-SIDE ARROW-GRASS. (Welsh : *Saethbenig y morfa.* Meadows and salt marshes, near the sea. Near Yarmouth. Mr. Woodward. Salt marshes near Ingestrie, Staffordshire. Dr. Stokes. Bog at the source of the Yar, in the Isle of Wight. Salt marshes about Lymington. (Abbey Holm, Cumberland. Hutchinson. In Anglesey. Welsh Bot. Knot-shole, and Bootle, near Liverpool. Dr. Bostock. Guillon Links ; and about Queensferry. Dr. Greville. E.)

P. May—Aug.§

COLCHICUM.|| *Calyx* none : *Bloss.* with six divisions, tube

* (*Sphaeria Tofieldia* is parasitic on its leaves. E.)

† (From *τρεῖς*, three, and *ῥαχίς*, the head of an arrow : alluding to the pointed valves of the capsule. E.)

‡ Cows are extremely fond of it ; (probably attracted by its saline flavour. E.) Horses, sheep, goats, and swine eat it.

§ More strongly impregnated with salt, and acceptable to horses, cows, sheep, goats, and swine.

|| (From *Colchis*, on the Euxine sea, where this plant is said to flourish abundantly. E.)

very long, extending down to the roots : *Caps.* three inflated, united.

C. AUTUMNALE. Leaves flat, broadly spear-shaped, upright : (segments of the blossom oblong. E.)

Stoerck—*Fuchs*. 356. 357—*Woodw.* 177—*E. Bot.* 133—*Trag.* 759—*J. B.* ii. 649—*Blackw.* 566—*Kniph.* 12—*Dod.* 460. 2—*Ger. Em.* 157. 1—*Ger. Em.* 157. 2—*Pet.* 67. 2—*Tourn.* 181. 182—*H. Ox.* iv. 3. 1—*Ger.* 127. 1 and 2.

Flowers in September, produces its fruit in the following spring, and ripens it in summer. Linn. In the spring several spear-shaped leaves arise with generally one or two as long as the rest, but only a quarter as wide, being a kind of *flower-leaves* to the seed-vessel. *Capsule* large, somewhat egg-shaped, with three very blunt angles. *Woodw.* Blossom tube three-cornered ; *segments* rather unequal. *Styles* reaching down to the root. *Blossom* lilac-colour, or pale purple. *Germen* at the root, surrounded by the rudiments of the future leaves. It lies buried all winter within the root ; in spring it arises from the ground, supported on a fruit-stalk, and, presenting its capsule to the influence of light and air, ripens about the time of hay-harvest.

May not the very great length of the styles account in some measure for the delay in the ripening of the seeds? As this plant blossoms late in the year, and probably would not have time to ripen its seeds before the access of winter, which would destroy them, Providence has so contrived its structure, that this important office may be performed at a depth in the earth, out of reach of the usual effects of frost, as seeds buried thus deep are known not to vegetate. A no less admirable provision is made to raise them above the surface when perfected, and to sow them at a proper season. (Paley adverts to these peculiar circumstances, as affording a striking instance of the *compensatory* system in the economy of nature. *vid. Nat. Theol.* v. ii. c. 20. E.)

MEADOW SAFFRON OR TUBEROOT. (The flowers being quite destitute of foliage, this “leafless orphan of the year,” is by our peasantry named *Naked Lady*. E.) Meadows low as well as mountainous, in rich soil in the west and north of England. (Frequent in Worcestershire and Herefordshire. About Ditton, on the Clea-hill, Salop. E.) Near Bury. Mr. Woodward. Derby. Mr. Whatcley. In orchards on the borders of Malvern Chase, Worcestershire. Mr. Ballard. Wellington and Hales Owen, Shropshire. In the meadow between the church and the medicinal spring at Cheltenham in great plenty. (Field opposite Egleston, Durham. Rev. J. Harriman ; and near Darlington. Mr. Robson, in *Bot. Guide*. Alloa, the seat of Mr. Erskine. Lightfoot. Under a beech-tree between Upper Leeswood House and the river near Mold, Flintshire. Mr. Griffith. A little below Newby Bridge, on the left hand side of the road to Ulverstone. Mr. J. Woods, jun. In St. Mary Blandford meadows. Pulteney. Meadows about Painswick. Mr. O. Roberts. Meadows about Keynsham, Whitechurch, Queen’s Charlton, and Pensford, Somersetshire. E.)

P. Aug.—Sept.*

* Notwithstanding the poisonous qualities of this plant, Dr. Stoerck, of Vienna, has taught us that it is a useful medicine. The roots have much of acrimony. An infusion of them in vinegar, formed into a syrup, by the addition of sugar or honey, is found to be a very useful pectoral diuretic. It seems in its virtues very much to resemble Squill, but is less nauseous and less acrimonious, though more sedative. (Dr. Swediaur recommends it

(Var. 2. *Floribus serotinis*. Blossom accompanying the leaves in the spring, divisions very large, green, and leaf-like; stamens imperfect.

E. Bot. 1432—Cam. Epit. 846.

Shown to Sir J. E. Smith by Mr. Salmon, who observed it growing thus year after year in a meadow near Devizes. E.)

(Var. 3. *Fl. albo*. Blossom perfectly white; segments alternately larger and smaller; stamens three longer and three shorter. In pastures about the Rookery, Brislington, and about Pensford, near Bristol. E.)

HEXAGYNIA.

ARISTOLOCHIA.* Bloss. one petal, tongue-shaped, inflated at the base: Stamens near the germen: Caps. six-celled, beneath.

A. CLEMATITIS. Leaves heart-shaped: stem upright: flowers crowded, pedunculate, axillary.

(Hook. Fl. Lond. 149—E. Bot. 398. E.)—Ludw. 105—Riv. Mon. 116—Mill. Illustr.—Mill. Ic. 51. 1—Woodw. 238—Blackw. 255—Kniph. 1—Clus. ii. 71—Dod. 326—Lob. Obs. 332 2—Ic. i. 697. 2—Ger. Em. 847. 4—H. Oz. xii. 17. 5—Ger. 697—Lonic. i. 134. 2—Fuchs. 90—Trag. 178—Matth. 648—Gars. 5. A.

(Increases fast by its long and slender creeping root: should therefore be cautiously admitted into gardens. E.) Stem upright, two or three feet high, simple, scored, cylindrical, smooth, slightly flexuose. Leaves alternate, blunt, shining above, pale green, smooth and veiny underneath. Leaf-stalks nearly as long as the leaves. Flowers sometimes double,

as a narcotic, and drastic purge, particularly in cases of dropsy. Sir Everard Home submits, that the clear tincture is equally efficacious in curing the gout, as the celebrated French remedy, Eau Medicinale, (of which this plant is supposed to constitute a principal ingredient;) without proving so destructive to the constitution. Vid. Phil. Tr. 1817. Dr. Scudamore has ably treated of these pretended specifics in gout, and condemns them as ultimately injurious. E.)

In a pasture in which were several horses, and eaten down nearly bare, the grass was closely cropped even under the leaves, but not a leaf bitten. Mr. Woodward. (In many instances it has proved fatal to cows. Salisbury. Hungry calves have been killed by feeding on this herbage early in the spring; Purton: but in general animals shun, as though aware by instinct of

“the baleful juice
Which poisonous Colchian gables produce.”

So virulent do the effects of *Colchicum* appear to be, that even the fingers have been benumbed in preparing it; and a single grain in a crumb of bread taken internally has produced burning heat in the stomach and bowels, strangury, tenesmus, hiccup, &c.—The flowers and seeds have likewise occasioned violent symptoms. Stöck. The functions of the roots being of more than ordinary importance, they would seem to be specially protected from the ravages of subterraneous insects by the acrid juice with which they are imbued. They afford an admirable exemplification of what Linnæus termed the *hibernaculum*, or winter cradle of the plant.—As an elegant writer has observed, “the flowering of the *Colchicum* invariably announces the defoliation of deciduous trees; and while the ‘sear and yellow leaves’ are so many emblems of mortality to the descending year, like the infant in the poem of the Persian Sadi, it smiles on the bosom of its dying parent.” E.)

* (ΑΡΙΣΤΟΣ, best, and λογεωω, to bring forth; from its supposed efficacy in promoting parturition. E.)

six or more together, upright or hanging down, (contracted about the middle, expanding at the mouth. E.) *Blossom* scored, yellowish green, often tinged with purple. *Capsule* egg-shaped, blunt, pendant. Woodw.

BIRTH-WORT. Woods and hedges. Wood two miles from Thorndon, Essex, and in Cambridgeshire. Blackstone. Near Maidstone. Hudson. Surston, Suffolk. Mr. Woodward. (Among the ruins of Carrow Abbey, Norwich. Rev. C. Sutton, in Bot. Guide. Near the walls of Godstow Nunnery. Sibthorp. Near Kencot, Oxfordshire. Rev. Dr. Goodenough. Chaddesley, near Kidderminster. Miss Rawlins, in Purt. E.)

P. July—Sept.*

POLYGYNIA.

ALISMA. *Calyx* three-leaved: *Petals* three: (*Caps.* six or more, generally single, seeded. E.)

A. PLANTA'GO. Leaves egg-shaped, acute, (on leaf-stalks: capsules obtusely triangular. E.)

Curt. 318—(*E. Bot.* 837. E.)—*Kniph.* 12—*Fl. Dan.* 561—*Trag.* 226. 2—*Lonic.* 142. 4—*Fuchs.* 42—*J. B.* iii. 787. 3—*Matth.* 482—*Dod.* 606. 1—*Lob. Obs.* 160. 1—*Ger. Em.* 417. 1—*Park.* 1245. 1—*Ger.* 337. 1—*Pet.* 43. 6.

(*Flower-stalk* rising two or three feet above the water, panicled. E.) *Fruit-stalks* mostly six in a whirl, alternately longer and shorter; their subdivisions the same. Stackh. *Stems* and *branches* with three blunt angles. *Leaves* (all radical, on long stalks, E.) with eight ribs, two of them near each edge. *Blossom* fully expanded about four in the afternoon; *petals* ragged at the end, shrivelling, pale, reddish purple, yellow at the base. *Capsules* about eighteen; egg-shaped; (ranged side by side in a circle. Sm. E.)

(**Var. 2. Lanceolata.** *Narrow-leaved*: being lengthened out by deep or running water. Not more than an inch or two in height. *Leaves* nearly strap-shaped, often without any defined stalk.

A. lanceolata. With. *Syn.* *A. plantago*, var. β . Huds. With. Ed. 2. Sm. *Plantago aquatica longifolia.* Dill. in R. *Syn.* 257. Welsh: *Amrywiaeth culdail.* E.)

* *Tipula pennicornis* fecundates the flowers. Schreb. (The anthers being situated under the stigma, could scarcely fulfil their function without such extraneous assistance. The little insect being entangled in the hairy tube of the blossom, in its efforts to escape performs the important office of anointing the stigma with the pollen. And thus in other instances, as Cowper remarks,

“When summer shines,
The bee transports the fertilizing meal
From flower to flower, and even the breathing air
Wafts the rich prize to its appointed use.”

The root is aromatic and bitter, but not ungrateful to the palate. It has been used in the Portland powder for the cure of gout, but not without producing effects more formidable than the original disease. As a warm, stimulating medicine it still retains a place in some Pharmacopœias. By the ancients great virtues were attributed to it, as appears from Dioscorides, Galen, and Pliny. An opinion is said to prevail in France, that the produce of vineyards in which this plant abounds becomes deteriorated in quality. E.)

WATER PLANTAIN. GREATER THRUM-WORT. (Irish: *Cor Chapog*. Welsh: *Dyfr Lyriad mwyaf*.)

Pet. 43. 7.

A. Plantago. Linn. *Plantago aquatica*. Ray. E.) Common in watery places, margins of pools and rivers. P. July—Aug.*

A. DAMASO'NIUM. Leaves heart-oblong: styles six: capsules awl-shaped, (stellate. E.)

Curt.—(*E. Bot.* 1615. E.)—*Lob. Obs.* 160. 2; and *Id.* i. 301. 1—*Ger. Em.* 417. 2—*Park.* 1245. 3—(*Pet.* 43. 5. E.)

Leaves with net-like veins, (all radical, with five ribs, floating. E.) Leaf-stalks flat, broad, and long. Stem naked. Flowers in lateral and terminating umbels. Woodw. Capsules large, spear-awl-shaped, forming a star-like umbellule with six spokes. (Flower-stalks about a span high, bearing one or two whorls of white flowers, yellow in the centre. E.)

STAR-HEADED THRUM-WORT OF WATER PLANTAIN. Ditches with stagnant waters. Rumford. Mr. Pitchford. (Wanstead Park, Essex. Mr. Sowerby. Ponds in Epping Forest. Mr. Winch. Near Ellesmere, Shropshire. Dr. Evans. At Framlingham, Suffolk. Rev. — Crabbe. Bot. Guide. On Waterdown Forest, and in ponds at Abergavenny Park, near Tonbridge. Mr. Forster. Eng. Fl. E.) P. June—Aug.

A. NA'TANS. Root-leaves strap-shaped, membranous; floating-leaves egg-shaped, obtuse, on long leaf-stalks: fruit-stalks solitary, (very long: capsules striated. E.)

(*E. Bot.* 775—*Fl. Dan.* 1573. E.)

In Alpine rivulets I have seen the leaves drawn to the length of three or four yards by the force of the stream, but in this state and situation it never flowers. Griff. (Capsules striated. Stems floating, throwing out radicles, with a few leaves and flowers from every joint. Leaves floating, about an inch long, with membranous concave stipulas. Flower-

* (This acrimonious, blistering plant, is said to resemble Crowfoot in its general qualities. Cattle are sometimes much injured, if not killed, by it, as atrophy and paralysis

subsequently made, known in North America; and though specimens are not latterly in repute with the more enlightened of the medical faculty, it seems desirable to afford publicity to whatever may by possibility relieve so dreadful a disorder. We, therefore, insert the following notice by Mr. C. Whitlaw, of Great Russell-street, London; who reports that "a remedy for the poison of the rattle-snake was purchased by the Assembly of South Carolina, of a negro, for giving him his freedom, and an annuity of 100*l.* for life." This remedy was derived from *Alisma Plantago*, and the same writer adds, "in order to induce the faculty to give its virtues a fair trial, as an antispasmodic, I may observe that I have frequently seen cattle, which have eaten the *Alisma*, completely paralyzed, so that they could not stand. As death ensues from the excessive stimulant action of the poison of the rattle-snake, and of the saliva of a rabid animal, upon the muscular system, I consider that a cure is effected by the peculiar sedative power of the *Alisma*, or antispasmodic, relaxing the spasms; and I believe it will be found to be an effectual specific for the cure of these two dreadful maladies, as also of tetanus. The best mode of administering it, when the difficulty of swallowing comes on, is to scrape about an ounce of the solid root, and let it be eaten between two slices of bread. The dose to be repeated in an hour, if the spasms are not relieved." E.)

stalks one or two from each joint, erect, simple, single-flowered. *Pet.* large, orbicular, white, with a yellow spot near the claw. *Caps.* six to twelve, (usually about eight. Linn.) oblong, recurved, beaked, copiously striated. Sm. E.)

CREEPING THRUWORT. (FLOATING WATER PLANTAIN. Welsh: *Dyfr Lyriad nofiadwy.* E.) Lakes and wide ditches. South end of the Lake of Bala, Merionethshire. Mr. Wood. In a small rivulet on the west side of the lower lake at Llanberris, about half a mile from the old castle. Mr. Griffith. (In Keswick Lake. Hon. C. Greville. Ancot Pool, near Shrewsbury. Mr. A. Aikin. In Llyn Coron, Anglesey. Welsh. Bot. E.) P. July.

A. RANUNCULOIDES. Leaves strap-spear-shaped, on leaf-stalks: (capsules five-angled, numerous, forming a globular head, their points diverging. E.)

(Hook. Fl. Lond.—E. Bot. 326. E.)—Fl. Dan. 122—J. B. iii. 788—Dob. Ic. i. 300. 2—Ger. Fm. 417. 3—Park. 1245. 2—Pet. 43. 8.

The whole plant has a very disagreeable smell. In places where the water is nearly dried up, the *scape* is from two to six inches high, hardly longer than the leaves, and some of the flowering branches trailing; but, where there is plenty of water, the *scape* rises from one to two feet, upright, naked, the umbels numerous, proliferous, and the root-leaves not greatly exceeding the leaf-stalks in breadth. Woodw. Capsules inversely egg-shaped, pointed. Blossom bluish white, opens about noon: (petals larger than those of *A. Plantago*. Leaves all radical. E.)

(The Rev. Hugh Davies, in Welsh Botany, applies the trivial name of *repens* to a plant generally resembling *A. ranunculoides*, and observed on the margins of several lakes in North Wales, so late as September and even October. "It is entirely procumbent and trailing, striking roots repeatedly at short distances, about one, two, or three inches asunder, and much resembles Cavanille's figure, tab. 55, as well as answers his definition, '*A. caulibus repentibus, foliis lanceolatis petiolatis acutis.*'" Those Botanists who have had opportunities of comparing larger specimens, one to two feet long, are convinced that this plant has no just pretension to be considered a distinct species. E.)

LESSEY THRUWORT. (SMALL WATER PLANTAIN. Welsh: *Dyfr Lyriad bychan.* E.) Wet turfy bogs. Giggleswick Tarn, Yorkshire. Curtis. Bungay, Suffolk; Ellingham Fen, Norfolk. Mr. Woodward. Between Burton and Derby. Mr. Whately. In the ditch at Goldmire, near Dalton. Mr. Atkinson. (About Bootle and Crosby, near Liverpool. Dr. Bostock. Not uncommon in Anglesey. Welsh Bot. In a ditch surrounding Feckenham bog, Worcestershire. Purton. E.) In the marsh at Marazion. Goonhilly downs, Cornwall; and Preston, near Kingsteignton, Devon. Rev. J. Pike Jones. In dykes above Sandwich; and at Ham ponds, Kent, abundant. Mr. Gerard E. Smith. (Not unfrequent in the district of the Lakes. E.) P. June—Sept.

CLASS VII.

HEPTANDRIA.

MONOGYNIA.

TRIEN TALIS.* *Calyx* seven leaves : *Bloss.* with seven segments, equal, flat : (*Capsule* dry, globular, many-valved, one-celled : *Seeds* several, tunicated. E.)

T. EUROPEA.

(*Hook. Fl. Lond.* 159. E.)—*E. Bot.* 15—*Fl. Dan.* 84—*C. B. Pr.* 99—*Pet.* 62. 13—*Park.* 509. 5. a—*C. B. pr.* 100—*H. Ox.* xii. 10. row 3. 6—*Park.* 509. 5. 6.

Blossoms close on the approach of rain, when the flowers hang down. Linn. *Stem* single, about five inches high. *Leaves* five to seven, crowning the stem : as also the elegant white *flowers*, commonly two, on long fruit-stalks, rather large. Terminal *leaves* sometimes eight, finely but obscurely serrated, smooth ; one or two smaller ones scattered on the upper part of the stem. *St.* *Leaves* sometimes oval-spear-shaped. Woodw. (whorled, lowermost very obtuse. In the latter part of the season the number of *stamens* seldom exceeds six. *Capsule* (formerly mistaken for a proper berry,) one-celled, many-valved, its valves deciduous, yellowish-brown, and shining. The *valves*, which are extremely fugacious, were first detected by Sir J. E. Smith. *Fl. Lond.* E.)

CHICKWEED WINTER-GREEN. Woods and turfey heaths in the northern counties. (Near Settle, Yorkshire. Mr. Woodward. East side of Seamer Moor, near Scarborough. Mr. Travis. In Woskerley Park, near Wolsingham, Durham ; moors at Rothbury, fir plantation at Catcherside, four miles west of Wallington, Northumberland ; woods at Blair Athol. Mr. Winch. Very plentiful in the woods of Kinnardy, Angus-shire. *Fl. Lond.* E.) Near Bingley, Yorkshire, plentifully. Moorish ground on the sides of the Highland mountains. Foot of Ben Lomond ; on the north side, plentiful. Den of Ballhaisek, Perthshire, and woods about Aberdeen. Mr. Brown. P. June—July.

* (The third part of a foot ; descriptive of the usual height of the plant. E.)

CLASS VIII.

OCTANDRIA.

MONOGYNIA.

(1) *Flowers complete.*

A'CER. *Barren Flowers* many: *Bloss.* five petals: *Cal.* five-cleft: *Capsules* (*Samaræ*) two or three; each one-seeded, (sometimes two; E.) winged with a long membranous expansion.

ŒNOTHERA. (*Cal.* with four divisions, superior: *Bloss.* four petals: *Caps.* four-celled, beneath: *Seeds* beardless. E.)

EPILOBIUM. *Bloss.* four petals: *Cal.* with four divisions, deciduous, superior: *Caps.* four-celled, elongated: *Seeds* downy.

CHLO'RA. *Bloss.* eight-cleft: *Cal.* eight leaves, beneath: *Caps.* one-celled, two-valved, many-seeded.

VACCINIUM. *Bloss.* eight-cleft: *Cal.* four-toothed, superior: *Anthers* awned in the middle: Fruit a *Berry*.

(MENZIESIA. *Bloss.* one petal: *Cal.* one leaf: *Caps.* superior; partitions double, from the margins of the valves. Sm. E.)

ERICA. (*Cal.* four-leaved: *Bloss.* monopetalous: *Caps.* four-celled, four-valved; dissepiments from the middle of the valves: *Anthers* before flowering connected by two lateral pores. E.)

(CALLUNA. *Bloss.* one petal: *Cal.* double, each of four leaves: *Caps.* superior; partitions from the column, alternate with the valves. Sm. E.)

POPULUS. *Flowers* in catkins; B. and F. on distinct plants: *Cal.* a ragged scale of the catkin: *Bloss.* turban-shaped, oblique, entire.

F. *Summit* four-cleft: *Caps.* superior, two-celled, two-valved: *Seeds* many, downy.

[*Monotropa Hipopithys.*]

(2) *Flowers incomplete.*

DAPHNE. *Cal.* four-cleft, equal, resembling a blossom:
Stamens inclosed: *Berry* pulpy, (single-seeded. E.)

[*Salix pentandra.*]

DIGYNIA.

CORYLUS. *Flowers* B. and F. on the same plant: *Bloss.*
 none.

B. *Catkin* tiled: *Cal.* one leaf, three-cleft, resembling
 a scale, inclosing one flower.

F. *Cal.* one leaf, bifid, ragged: *Nut* egg-shaped, (in-
 vested with the coriaceous calyx. E.)

[*Scleranthus annuus* & *perennis.* *Chlora perfoliata.* *Polygonum*
Pensylvanicum. *Chrysosplenium.* *Quercus.*]

TRIGYNIA.

POLYGONUM. *Cal.* with five divisions, inferior, coloured:
Bloss. none: *Seed* one, naked.

[*Quercus.*]

TETRAGYNIA.

ELATINE. *Bloss.* four petals: *Cal.* four leaves: *Caps.* four-
 celled; (partitions from the column: *Seeds* oblong. E.)

PARIS. *Bloss.* four petals, awl-shaped: *Cal.* four-leaved:
Berry four-celled: (*Seeds* numerous. E.)

ADOXA. *Bloss.* superior, four or five-cleft: *Cal.* two-leaved:
Berry with four or five seeds.

MYRIOPHYLLUM. *Flowers* often B. and F. on the same
 plant: *Cal.* four-leaved: (*Pet.* four.

F. *Cal.* four-leaved: *Pet.* four: *Stigm.* four, sessile:
Nuts (*Drupas*) four, single-seeded. E.)

QUERCUS. *Flowers* B. and F. on the same plant: *Bloss.*
 none.

B. *Cal.* bell-shaped, mostly five-cleft: *Stam.* five to ten.

F. *Cal.* one leaf, bell-shaped, very entire, rough: (*Style* one: *Summits* three: *Nuts* one-celled, one-seeded, (acorn,) surrounded at the base with the enlarged, cup-shaped involucre. E.)

RHODI'OLA. *Flowers* B. and F. on different plants.

(B. *Bloss.* four petals: *Cal.* with four divisions: *Nect.* four, emarginate.

F. *Cal.*, *Pet.*, *Nect.*, the same: *Pist.* four: *Germens* four, with many seeds. E.)

MONOGYNIA.

EPILOBIUM.* *Cal.* four-leaved, deciduous: *Petals* four: *Cap.* beneath, four-celled, very long: *Seeds* many, bearded.

(1) *Stamens reclining.*

E. ANGUSTIFOLIUM. (Leaves scattered, strap-spear-shaped, veiny, smooth: petals unequal: stamens declining. E.)

Curt. 106—*Fl. Dan.* 289—(E. Bot. 1947. E.)—*Kniph.* 11—*Park. Par.* 267. 6—*Ger. Em.* 289. 7—*Pet.* 52. 10—*J. B.* ii. 907. 1—*H. Ox.* iii. 11. row 1. 1. f. 3.

(Root creeping, with numerous buds. *Stems* three to six feet high, reddish, seldom branched. *Leaves* nearly sessile, strap-spear-shaped, acute, entire or slightly toothed, smooth, veiny, glaucous beneath. *Pollen* blue. *Stigma* four-cleft. E. Bot. E.) *Leaves* edged with a few small teeth, thinly set. *Blossoms* rose-coloured, or white, (numerous, in long terminal clusters. *Germens* hoary, purplish above. E.) *Petals* entire. The *stamens*, the *anthers*, and the *pistils* have regular and successive movements during the impregnation of the germen.

ROSE-BAY WILLOW-HERB* (PERSIAN OR FRENCH WILLOW. Welsh: *Helyg-lys hardd.* In Norfolk, but not a native of that county. E.) Woods and hedges. Meadows near Sheffield; Alton, Hants; Maize Hill, beyond Greenwich; Grass Woods, near Kilnsay, Yorkshire. At Satterthwaite and Brow-edge, in Furness Fells. Mr. Jackson. Near Berkhamstead, Herts, plentifully. Mr. Woodward. (Shepscombe Wood, Painswick. Mr. O. Roberts. On rocks by the west side of Shewing Shields, near Crag Lake, Northumberland; on rocks above Folden Lead Mill, near Edmond Byers, Durham. Winch Guide, Box Hill, Surry. Mr. W. Christy. In a wood near Tyfry, Anglesey. Welsh Bot. Above Langton Ford, and other inaccessible rocks among the Cheviots. Mr.

* (From *επι λοβου*, *lov*, expressive of a beautiful flower growing upon a pod; the red blossoms being thus singularly placed in a lateral position. E.)

470 OCTANDRIA. MONOGYNIA. EPILOBIUM.

Winch. Habbies How, Pentland Hills. Greville. Near the canal bridge at Oldbury, Staffordshire. E.) P. June—Aug.*

(2) *Stamens upright ; blossoms regular ; petals cloven.*

E. HIRSU'TUM. Leaves egg-spear-shaped, hairy, half embracing the stem : stem much branched and hairy.

Fl. Dan. 326—*Curt.* 117—(*E. Bot.* 838. E.)—*Fuchs.* 491—*J. B.* ii. 905. 3—*Lonic.* i. 135. 2—*Ger.* 386. 3—*Ger. Em.* 476. 6—*Pet.* 52. 11—*H. Ox.* iii. 11. 3.

Root creeping ; *whole herb* downy and clammy. *Stem* cylindrical, (three or four feet high. E.) *Leaves* opposite or alternate, with soft hairs on both sides ; serratures hooked, blunt. *Branches* and *fruit-stalks* from the bosom of the leaves. *Calyx-leaves* smooth, united at the base by means of a glandular receptacle. *Petals* twice as long as the calyx, inversely heart-shaped, of a fine rose-colour ; claws white with white scores spreading upwards. *Filaments* white, the longest extending far beyond the calyx. *Flowers* sometimes wholly white.

LARGE-FLOWERED WILLOW-HERB. GREAT HAIRY WILLOW-HERB. COD-LINGS and CREAM. (Welsh: *Helyglys pér.* E.) Moist hedges, ditches, and banks of brooks, rivers, and lakes. P. July.†

E. PARVIFLO'RUM. Leaves spear-shaped, pubescent, nearly sessile : stem hairy, unbranched.

Curt. 125—(*E. Bot.* 795. E.)—*Fl. Dan.* 347—*H. Ox.* iii. 11. 4—*Pet.* 52. 12.

Stem cylindrical, sometimes branched towards the top. *Leaves* mostly opposite, lower ones rather embracing the stem, middle ones sessile, upper ones sometimes on very short leaf-stalks. *Blossom* much smaller than in either of the preceding species ; flesh-coloured. *Filaments*, the longest scarcely exceeding the calyx. (Differs from the preceding in being only twelve to eighteen inches high ; the *root* fibrous, not creeping ; smaller *flowers* and *leaves* ; the latter and *stem* downy on all sides. E.)

(SMALL-FLOWERED HOARY WILLOW-HERB. Welsh: *Helyglys lledwyd mânflodenog.* E.) *E. hirsutum.* Huds. β. Linn. *E. villosum.* Curt. Sibth. and With. Ed. ii. *E. parviflorum.* Schreb. Gmel. and With. Ed. i. Watery places and sides of ditches and rivulets. P. July—Aug.

E. MONTA'NUM. Leaves opposite, egg-shaped ; toothed ; the upper ones alternate : stem cylindrical : (stigma quadrifid. E.)

* Goats are extremely fond of it. Cows and sheep eat it. Horses and swine refuse it. *Phalana porcellus* and *Sphinx Elpenor* are found upon it. The suckers of the root are eatable. An infusion of the plant has an intoxicating property, and the Kamtschadales brew a sort of ale from the pith, and from the ale make alegar. The down of the seeds mixed with cotton or fur, has been manufactured into stockings and other articles of clothing. (Common in gardens, where it ought to be introduced with caution, for though ornamental, by the spreading of its creeping root, it will be likely to usurp a larger space than intended. It is more suitable to the wilder shrubberies, and will bear even shady situations in towns. E.)

† The top shoots have a delicate acidulous fragrance resembling scalded codlings, whence one of its names, but so transitory, that before they have been gathered five minutes, it is no longer perceptible. Horses, sheep, and goats eat it. Cows are not fond of it. Swine refuse it. (A sort with variegated leaves is sometimes introduced into gardens. E.)

Curt. 195—(E. Bot. 1177. E.)—Fl. Dan. 922—Kniph. 11—Walc.—Clus. ii. 51. 2—Dod. 85. 1—Lob. Obs. 185. 4—Ger. Em. 479. 11—Park. 548. 3—Pet. 53. 1.

(Root with red shoots. Stem one and a half to two feet high. Stigma four lobed, by which it is essentially distinguished from *E. roseum*. E. Bot. E.) Stem cylindrical, upright, reddish, very soft, somewhat downy. Leaves smooth, finely toothed, very soft, especially underneath, with a down just perceptible. Linn. Leaves spear-egg-shaped. Petals pale purple, veined with deeper purple lines; sometimes white. (Graves remarks that a very small proportion of the innumerable seeds vegetate, they being peculiarly liable to the ravages of a minute insect which perforates just below the plume. E.)

Var. 2. Leaves three and four at a joint.

(BROAD SMOOTH-LEAVED WILLOW-HERB. Welsh: *Helyglys llyfn llydan-ddail*. E.) Woods, hedge-rows, shady lanes and moist meadows, in a gravelly soil, and sometimes on walls in courts, (or on cottage roofs. E.) P. July.

E. TETRAGONUM. Leaves spear-shaped, finely toothed, sessile, the lowermost opposite: stem quadrangular: (summit entire. Curt.)

(E. Bot. 1948. E.)—Fl. Dan. 1029—Kniph. 11—Curt. 131.

(May be distinguished from *E. palustre* by the quadrangular ribs at unequal distances from each other on the stem. E. Bot. E.) Stem upright. Leaves smooth; sometimes all strap-spear-shaped. Woodw. Blossom purplish red; (plant twelve to eighteen inches high. E.)

SQUARE-STALKED WILLOW-HERB. (Welsh: *Helyglys pedrongl*. E.) Marshes, and sides of rivulets and ditches. P. July.

(E. ROSEUM. Leaves stalked, ovate, toothed: stem erect, with four obsolete angles: stigma undivided.

E. Bot. 693.

Herbage not unlike *E. montanum*, but the stem is more branched, and at the upper part obscurely quadrangular. Leaves smooth, thin and delicate; upper ones alternate. Flowers paler than the preceding; petals streaked at the base. Stigma small, club-shaped and undivided, by which it essentially differs from *E. montanum*, and agrees with *tetragonum*. Yet it is too abundantly propagated by seed to be supposed a mule production. Sm.

PALE SMOOTH-LEAVED WILLOW-HERB. *E. roseum*. Schreb. Ehrh. Sm. *E. tetragonum* var. Curt. *E. montanum* γ. Willd. In waste boggy ground, or watery places, rare. In Lambeth marsh. Curtis. At Moreton, near Ongar. Mr. E. Forster. Near Withyam, Sussex. Rev. S. Bale. By ponds near Dorking. Mr. Winch. P. July. E.)

E. PALUSTRE. (Leaves sessile, strap-spear-shaped, slightly toothed: stem cylindrical: stigma undivided. E.)

Dicks. H. S.—(E. Bot. 346. E.)—Fl. Dop. 1547.

Stem cylindrical, downy, or smooth, about a foot high. Relh. Upper leaves alternate, varying extremely in breadth. Short leafy branches rise from the bosom of the leaves. Woodw. Leaves smooth. Petals notched at the end, reddish purple, with darker streaks. Anthers, at the time of

shedding their pollen, adhere firmly to their summits, so as hardly to be separated without violence, but before and after that time they do not touch it. (*Flowers small. Whole plant sometimes very diminutive. E.*)

(ROUND-STALKED MARSH WILLOW-HERB. Welsh: *Helyglys culddail y faunog. E.*) Marshes, bogs, and sides of lakes. P. July.

E. ALPINUM. Leaves opposite, nearly sessile, smooth, egg-spear-shaped, almost entire: capsules sessile; stem with about three flowers, decumbent at the base.

Dicks. H. S.—(Hook. Fl. Lond. 170—E. Bot. 2001. E.)—Fl. Dan. 322—Lightf. 10. 1. at p. 242.

Stem trailing, hardly a span high. Linn. Afterwards upright, bearing one or two flowers at the top. *Leaves* quite smooth. *Pods* quite smooth, four or five times longer than the leaves. *Lightf. Leaves* sometimes slightly toothed. Woodw. (Only the *floral-leaves* alternate. *Flowers* generally two, rarely one or three, on simple stalks from the bosoms of the upper leaves. *Petals* rose-coloured, cloven. *E. Bot. E.*)

ALPINE WILLOW-HERB. (By the sides of alpine rills, not unfrequent, particularly in Scotland. *E.*) Ben Buy, Ben Lomond, and near Little Loch Broom, Ross-shire. Mountain in Breadalbane and Corry Yaal, in Glenco. (On Ben Lawers. Mr. Winch. *E.*) P. July—Aug.

(*E. ALSINIFOLIUM.* Leaves on leaf-stalks, egg-shaped, sharp-pointed, toothed: stigma undivided: root creeping, matted: stem decumbent, obtusely quadrangular.

E. Bot. 2000.

Root creeping widely, forming broad tufts; leafy throughout the winter. *Stems* numerous, decumbent, flowering part ascending, roundish, but marked with four angles. *Petals* veined, cloven; *germen* downy, with minute recurved hairs; *fruit* very long. *E. Bot.* (glabrous, according to Hooker; who also observes that the habit is altogether different from that of *E. montanum*, to which it approaches in character, wanting its rigidity, and much smaller, seldom more than six to eight inches high. It is perfectly distinct from *E. alpinum*. Mr. Winch states, "*E. alsinifolium*, *alpinum*, and *alpestre*, of the Scotch and Swiss Botanists, I have had under cultivation many years. The former may be confounded with small alpine plants of *E. montanum*, but is very distinct from the small procumbent *E. alpinum*." *E.*)

CHICKWEED-LEAVED WILLOW-HERB. *E. alsinifolium.* Villars. Winch. The latter author has clearly ascertained this to be the plant of Ray, "*Lysimachia*." *E. alpinum* of Curtis; also the "*Siliquosa*," &c., hitherto mistaken for *E. alpinum*, which has only been found in Scotland. On the banks of a rocky rivulet on the south side of Cheviot; Cronkley Fell, Yorkshire; also Buckbarrow. (Curtis's station for his *E. alpinum*.) Mr. Winch. It is likewise said to have been found in the Highlands.

P. June—July. *E.*)

(CENOTHERA.* *Bloss.* four petals: *Cal.* with four divisions: *Caps.* cylindrical, beneath: *Seeds* naked: *Anth.* linear. *E.*)

* (From *ονος*, wine, and *θηρα*, imbued or penetrated with; the root having a vinous scent when dried. *E.*)

(O. BIEN'NIS. Leaves egg-spear-shaped, flat: stem covered with sharp points and soft hairs: stamens equal: petals undivided. E. Bot.

E. Bot. 1534—Fl. Dan. 446—Kniph. 67.

This plant has been discovered in such various and little frequented parts of the Kingdom, that we can no longer hesitate to acknowledge it as British. Mr. Norris says, it has established itself, during five years, if not longer, in a neglected concavity, whence a coarse sand-stone had been formerly extracted, in Bowood Park, near Devizes. The seeds are regularly ripened every year, and produce abundantly; the plants in general do not flower before the second season, after which the root dies, being biennial. They seem perfectly naturalized and increase in number yearly. Mr. Norris lately saw more than twenty distinct ones in flower, surrounded by a multitude of younger, which will not blossom till the succeeding season. The spot is not near any house nor vestiges of such. About Bath, and some other places, it is commonly found in parallel circumstances with *Datura Stramonium*. It attains the height of five or six feet. The main stem and larger branches are every where beset with minute asperities, terminating in fine transparent hairs, feeling not unlike a rough file. Leaves rather waved than flat. Blossoms fragrant, large and yellow, expanding in an evening.

EVENING PRIMROSE. Ballast Hills, near Sunderland, Durham. Mr. Robson. In Worcestershire. Rev. Mr. Bourne. Fields between Crosby and the sea, near Liverpool. Dr. Bostock. (In a wild part of the Vale of Clwyd, by the road side between Denbigh and Ruthin. Mr. W. Christy. Banks of the Arrow, where a considerable depth of soil had been removed for the purpose of widening the river, by which means the seeds, which had probably lain dormant many years, were brought forth to vegetation. Purton. For a similar instance vid. *Osmunda regalis*. With. v. 4. E.) B. July—Sept.*

* (Lately introduced as a culinary vegetable, and cultivated in the same manner as Rampions, (*Campunula Rapunculus*); the roots eaten raw being esteemed a delicacy. Mr. Griffith. The flowers generally open in the evening, just as the sun sinks below the horizon. This opening is effected by a very sudden retraction of the calyx leaves, which are forcibly thrown against the peduncles, and followed by an immediate expansion of the petals. The flowers continue thus expanded till the sun is an hour or two high, when they partially close, and again open at evening; or rather others succeed them. Mr. Pursh has noticed an appearance of phosphoric light emanating from the flowers during very dark nights. Barton. This phenomenon has likewise been remarked in some few other phenogamous plants, and in certain mosses growing in the moist, cavernous recesses of Dartmoor, as we are informed by the Rev. R. Park Welland. The Evening Primrose is a plant well adapted to the garden or shrubbery, which has the advantage of flourishing even in the smoky atmosphere of large towns. Bearing its primrose-coloured flowers on branches several feet high, it has been called the *Tree-primrose*, and from the season of its blossoms expanding, the *Evening Star*. This latter peculiarity has not escaped the moral muse of Bernard Barton, whose beautiful poem we dare not mutilate.

“Fair flow’r, that shun’st the glare of day,
Yet lov’st to open, meekly bold,
To evening’s hues of sober grey
Thy cup of paly gold;—
I love to watch at silent eve
Thy scatter’d blossoms’ lonely light,
And have my inmost heart receive
The influence of that sight.
I love at such an hour to mark
Their beauty greet the night-breeze chill,
And shine, mid shadows gathering dark,
The garden’s glory still.

A'CER.* *Barren* flowers intermixed.

Calyx five-cleft: *Bloss.* five petals: *Caps.* two or three, one-seeded, terminating in a leaf-like expansion.

A. PSEUDO-PLATANUS. Leaves five-lobed, blunt, unequally serrated: flowers in compound, pendent bunches.

E. Bot. 303—*Hunt. Evel.* p. 200. ii. p. 193. *Ed. i. at p.* 293—*Nat. Delin.* ii. 21. 1. *at p.* 312—*Lob. Obs.* 614; and *Ic.* ii. 199. 2—*Park.* 1425. 1—*Clus. i.* 10. 1—*Dod.* 840. 1—*Ger. Em.* 1484. 1—*Trag.* 1125.

(A large handsome tree, with spreading branches, and luxuriant foliage. *Leaves* large, on long petioles, pale beneath. *Pedicels* of the flowers villose. *Grev.* The extended *wings* of the capsules, an inch in length, greatly facilitate the dispersion of the seeds. *E.) Blossom* yellowish green; petals so much like the calyx that they might be considered at first sight as a cup of ten leaves.

SYCAMORE TREE. GREATER MAPLE. (MOCK PLANE TREE. In Scotland, PLANE TREE. Welsh: *Masarnuydd mwyaf.* Gaelic: *Plinntrinn.* *E.) Woods, hedges, and near houses.* In the sub-alpine regions of Cumberland and Westmoreland, it is quite at home, as well as on the mountainous sheep-pastures between Kirby-Stephen and Sedburgh. *Mr. Winch. E.)* T. May—June.†

For such 'tis sweet to think the while,
When cares and griefs the breast invade,
Is Friendship's animating smile
In sorrow's dark'ning shade.

Thus it bursts forth, like thy pale cup
Glistening amid its dewy tears,
And bears the sinking spirit up
Amid its chilling fears.

But still more animating far,
If meek Religion's eye may trace,
E'en in thy glimmering earth-born star,
The holier hope of Grace.

The hope—that aethy beauteous bloom
Expands to glad the close of day,
So through the shadows of the tomb
May break forth Mercy's ray." *E.)*

* (From *acer*, sharp, or hard, according to Vossius; the wood being used to form javelins. *E.)*

† The Sycamore flourishes best in open places and sandy grounds; but will thrive very well in richer soil. It grows quick; is easily transplanted; bears cropping, and grass flourishes under its shade. It is said to grow better near the sea than in any other situation, and that a plantation of these trees at fifty feet asunder, with three Sea Sallow-thorns between every two of them, will make a fence sufficient to defend the herbage of the country from the spray of the sea. *Gent. Mag.* 1757, p. 252. The wood is soft, and very white. The turners form it into bowls, trenchers, &c. (the use of which is frequently mentioned by both ancient and modern poets. *E.)* If a hole is bored into the body of the tree when the sap rises in the spring, it discharges a considerable quantity of sweetish watery liquor, which is used in making wines, and, if inspissated, affords a fine white sugar, (though the produce is far less abundant than that from the North American *Acer saccharinum*, the proper Sugar Maple, the art of extracting which was known to the aboriginal tribes; and some quantity has been for many years sent to France to be refined. *E.)* The pollen appears globular in the microscope, but, if touched with moisture, these globules burst open with four valves which assume the form of a cross. *Scarabeus Melontha* feeds upon the leaves. *Linn.* ("The seed of the Sycamore affords a pleasing instance of the care that

Var. 2: Leaves glaucous underneath; serratures very distant.

Observed by A. Caldwell, Esq., of Dublin. (Has no pretension to be considered a distinct species, as suspected in E. Bot. p. 303. E.)

A. CAMPRÉ TRE. Leaves five-lobed, obtuse: the lower lobes notched: corymbus with three divisions, upright.

Nature takes for the preservation of her infant germs. In the seed (soaked in warm water) we shall find the radicle and long radicle leaves of the future plant folded up in an extraordinary manner, with the minute leaves that are to succeed them folded in their bosom; these radicle leaves are beautifully green, a circumstance not to be expected, as all light is excluded by three coatings and a woolly wrapper that invest them. The bounty and wisdom of Providence in nothing is more remarkably manifest than in the intelligence displayed, and the provision appointed, for the young of organized and inanimate nature. The egg of a bird or insect, or the seed of a plant, should alone humble to the dust the arrogance of man." Nat. Diary. T. T. 1824. The Sycamore would appear to have been originally an exotic, gradually introduced into Britain for ornament and shade. Turner and Evelyn deny its being indigenous, and Parkinson in 1640 says, "It is no where found wilde or naturall in our land that I can learne, but only planted in orchards or walkes for the shadowes sake." It was little known in England so late as the seventeenth century. Chaucer speaks of it as a rare exotic in the fourteenth century; and Gerard in 1597, as "a stranger in England, which groweth only in the walkes and places of pleasure of noblemen." It makes a beautiful appearance in bloom, (in May) and affords much pabulum for bees, smelling strongly of honey. Gilpin observes, "It forms an impenetrable shade, and often receives well-contrasted masses of light. Its bark has not the furrowed roughness of the oak; but it has a species of roughness very picturesque. In itself, it is smooth; but it peels off in large flakes like the planes, (to which in other respects it bears a near alliance), having patches of different hues, seams, and cracks, which are often picturesque." It is highly ornamental in rural scenery, in spring, by the delicate green of its luxuriant foliage, and in autumn, when

"No tree of all the grove but has its charms,
Though each its hue peculiar;

* * * * nor unnoted pass
The *Sycamore*, capricious in attire,
Now green, now tawny, and ere Autumn yet
Have changed the woods, in scarlet honours bright."

This tree has been supposed the same as that repeatedly mentioned by a like designation both in the Old and New Testament; and in proof of the considerable age to which it will attain, has been cited the testimony of St. Hieron, who lived in the fourth century after Christ, namely, that he saw the Sycamore tree which Zaccheus ascended to behold our Saviour enter Jerusalem, or, rather, to speak more correctly, on his passage through Jericho towards Jerusalem. But this is obviously an error, for the tree so denominated in holy writ, and in the present instance that from which the rich chief of the publicans paid homage to the Lord of Glory, full of power and grace, and scattering blessings around him, (Luke xix) was, we have no hesitation in asserting, *Ficus Sycomorus*. Linn. *Folio mori, fructum in caudice ferens*, Bauh. Pin. 459, of frequent occurrence in Egypt and other eastern countries, the leaves of which, as above described, resemble those of the mulberry tree, and the fruit that of the wild fig; whence the compound name from *sykos*, a fig, and *morus*, a mulberry-tree. It is well represented as the *Gomez* in Norden's Egypt, Pl. xxxviii. Among the larger specimens of British growth Strutt describes one at Cobham Park, which measures twenty six feet in circumference at the ground, and ninety four feet in height; also one at Bishopston, Renfrewshire, twenty feet in girth, and sixty feet in height. To secure varieties, (the principal of which is the striped) for pleasure grounds, budding, grafting, and inarching are practised: and it may be here observed that variegated plants in general should be planted in poor hungry soil, to encourage the disease which occasions these beautiful stripes, thus causing them to become more distinct. But these fancy trees, when confirmed, show their peculiarities to more advantage in a good soil. E.)

Hunt. Evel. at p. 190; i. p. 183. Ed. ii.—E. Bot. 304—Tourn. 386. 1—Spect. de la Nat. ii. 29. 2. at p. 290. and Nat. Delin. ii. 19. 2. at p. 312—Dod. 840. 2—Ger. Em. 1484. 2—J. B. i. 2. 166—Trag. 1123—Lon. i. 36. 1.

(Much smaller than the preceding: leaves not more than one and a half inch wide, downy when young, (as are the racemes,) sometimes nearly entire. *Cups* downy, with oblong, reddish wings. *E.*) *Bark* angular, cork-like. Seldom ripens its fruit in Sweden. *Linn.* *Blossoms* terminal; pale green.

COMMON MAPLE. (Welsh: *Masarnwydd lleiaf. Cynhowlen, N.W. Gwenwialen. S.W. E.*) Hedges and thickets. T. June.*

* (Maple was formerly the principal wood for all kinds of cabinet work, and, according to Evelyn, the knobs of ancient trees affording beautiful and richly variegated specimens were collected by the curious at high prices.—When beautifully veined or spotted, it was much prized by the Romans, and of such were composed the celebrated Tigrin and Pantherine tables; of which some particular specimens, as those of Cicero, Asinius Gallus, King Juba, and the Mauritanian Ptolemy, are said to have been worth nearly their weight in gold. But in modern times it has been in a great degree superseded by mahogany. At that remote era it was deemed a suitable material for purposes of state, and thus Virgil.

“A Maple throne rais’d higher from the ground
Receiv’d the Trojan chief.”

Pliny eulogizes the knobs and excrescences, the *brusca* and *mollusca*, of this tree, which often represented in their natural contortions, birds, beasts, &c. as does Ovid the clouded or mottled Maple. When allowed to grow to timber, it makes excellent gun-stocks, and screws for cyder presses. The Maple, though in our time rarely permitted to rise higher than brushwood, has been known to exist more than two centuries: at Kaowle, in Kent, the Duke of Dorset’s seat, one measures twelve to fourteen feet in growth. *E.*) The wood is much used for turning in the lathe, and vessels may be thus produced so thin as to transmit light. (Both species are subject to the minute fungus *Erineum acerinum*, *Part. t. 36*, in broad patches on the under side of the leaves, filaments crowded, pale, changing to reddish brown: also to black blotches; vid. *Mucor granulosus*. With. The foliage assumes a remarkably rich and mellow autumnal tint, of the successive variation of which an elaborate description may be found in *Journ. Nat.*; where also it is remarked that Maple is useful in hedges, not from the opposition it affords, but by reason of its very quick growth from the stole after it has been cut, whence it makes a fence in a shorter time than most of its companions; and when fire-wood is an object, it soon becomes sufficiently large for that purpose. The leaves often, in summer, exhibit a white mouldy aspect, which appears to be a mere exudation. The younger foliage, in spring, is beset with numerous red-coloured spiculæ, conjectured by the above writer to be occasioned by the puncture of some insect, probably for the formation of a nidus for its young.—Pliny recommends a cataplasm made from the roots to be applied in hepatic affections; but modern practice takes no notice of it. A thin slice of the singularly rugged young shoot cut through horizontally, presents a beautiful and curious object in the microscope, (*Journ. Nat. Pl. iv. f. 1.*) exhibiting the different channels, and variously formed tubes, through which the sap flows and the air circulates for the supply of all the diversified requirements of the plant; and “it is good and delightful,” adds the author of the same work, “to contemplate the wonderful mechanism that has been devised by the Almighty Architect, for the sustenance and particular necessities of the simple Maple: which naturally leads one to consider that, if He have so regarded such humble objects, how much more has He accounted worthy of his beneficence the more highly destined orders of His creation!”

To the admirers of the picturesque, to the lovers of human nature imbued with its most amiable attributes, the Maple has acquired additional interest, since beneath its shade, in Boldre church-yard, are deposited the remains of the pious Gilpin. There rests from his useful labours the exemplary parish priest, and the able illustrator of the circumjacent

CHLO'RA.* *Cal.* eight-leaved : *Bloss.* one petal, six or eight-cleft : *Caps.* one-celled, two-valved, many-seeded.

C. PERFOLIA'TA. Leaves perfoliate : panicle forked, many-flowered. *E.*) (*Hook. Fl. Lond. E.*)—*E. Bot.* 60—*Walc.*—*Barr.* 515 and 516—*J. B.* iii. 355—*H. Or.* v. 26. row 1. 1. and 2. f. 1—*Pet.* 55. 8—*Clus.* ii. 180—*Lob. Obs.* 219—*Ger. Em.* 547. 2—*Park.* 272. 4—*Ger.* 437. 2.

Root-leaves oval, sessile, spreading in form of a star ; *lowest stem-leaves* oval, spear-shaped, sessile, the rest perforated, oval-spear-shaped. *Flowers* in a kind of umbel, of three rays, encompassed by the uppermost leaf, the middle one bearing a single flower without any leaves ; the outer ones terminated by a leaf similar to the stem-leaves, from which arises an umbellule supporting one or more flowers. *Woodw.* *Leaves* of the calyx, and divisions of the blossom varying from eight to ten. *Stamens* from six to nine. *Capsules* oblong, longer than the tube of the blossom. *Style* thickest towards the top, cloven, yellow. *Summits* two, shaped like a horse-shoe. (*Stems* twelve to eighteen inches high, bearing a leafy panicle of numerous elegant bright yellow flowers, open in sunshine only, with scarlet stigmas. *Sm. E.*)

PERFOLIATE YELLOW-WORT. (**YELLOW CENTAURY.** Irish: *Dedgha buihe. E.*) In stiff clay, or marley grounds. Mountainous meadows and pastures in calcareous soil. Near Bungay. Mr. Woodward. Side of Malvern Chase, Worcestershire. Mr. Ballard. Edge of the Ridd Cliff, Worcestershire. Dr. Stokes. Coalbrook-dale. Mr. Aikin. Ranton Abbey, Staffordshire. River side opposite St. Vincent's Rocks. (Spade Adam, near the house, Cumberland. Hutchinson. Knot's-hole rocks, near Liverpool. Dr. Bostock. Vale of Dudcombe, near Painswick. Mr. O. Roberts. Ryegate Hill, and fields about Box Hill, Surry. Mr. Winch. On the banks in the King's-field, Selborne. White's Nat. Hist. Ventnor Cove, Isle of Wight. Mr. Snooke. *E.*) A. June—Sept.†

VACCINIUM.‡ *Cal.* superior : *Bloss.* one petal : *Filaments* fixed to the receptacle : *Berry* four-celled, many-seeded, beneath, dimpled.

(1) *Leaves deciduous.*

V. MYRTIL'LUS. Fruit-stalks single-flowered ; leaves serrated, membranous, egg-shaped : stem angular : calyx wavy, nearly entire. *Sm. E.*)

Dicks. H. S.—(*E. Bot.* 456. *E.*)—*Sheldr.* 18—*Fl. Dan.* 974—*Kniph.* 8—*Matth.* 231—*Dod.* 768. 2—*Lob. Obs.* 546. 2—*Ger. Em.* 1415. 1—*Park.* 1456. 1—*Blackw.* 463.

(Seldom rising above one or two feet. *Stems* much branched. *Leaves* alternate, smooth, veined. *Stamens* eight to ten. *Anthers* with a pore

scenery. In the autumn of the present year (1828) we visited, with mingled sentiments of veneration and regret, the sacred spot so characteristically chosen by himself.

"A man he was to all the country dear !"

For a description of the identical tree consult that eminent writer's Remarks on Forest Scenery ; and for a faithful delineation of it see Strutt's *Sylva Britannica. E.*)

* (From *κλωρος*, greenish yellow ; probably alluding to the colour of the blossom. *E.*)

† (Whole herb very bitter ; supposed to possess the virtues of Gentian, or of *Chironia Centaureum. Hook. E.*)

‡ (From *vacivivus* ; descriptive of the colour of the blossom. *E.*)

at the apex, and bicornate. E.) *Blossom* nearly globular, but a little flattened at the base; pale reddish purple; *mouth* very small, with five small reflexed teeth; reddish white. *Berries* bluish black, (large, acidulous. E.)

(A variety with *white* berries was observed by the Duke of Athol, in the woods about midway between Dunkeld and Blair: Encyc. Brit. E.) also in Corley Woods, Warwickshire, both with berries and blossom white. Mr. Bree, in Purk.

BILBERRY. BLACK WORTS. BLACK WHORTLE-BERRY. WIND-BERRY. (Welsh: *Lluswydden*. Gaelic: *Lus-nan-dearc*. E.) Woods and heaths. Porland Heath. Mr. Crowe. Rocks above Great Malvern, Worcestershire. Mr. Ballard. (On the dry hillocks of Wolmer-forest, Selborne: White's Nat. Hist. Hampstead-heath, Middlesex. E.) The Bishop's woods, near Eccleshall. Lightwoods, near Birmingham. (Abundant in the Highlands and Isles of Scotland. King's Park, Roslin and Auchindenny woods. Cadnant, &c. Anglesey. Welsh Bot. E.)

S. April—May.*

V. ULIGINOSUM. Fruit-stalks single-flowered: leaves very entire, inversely egg-shaped, obtuse, smooth: (branches cylindrical. E.)

(E. Bot. 581. E.)—*Kniph.* 9—*Fl. Dan.* 231—*Chus.* i. 62. 1—*Ger. Em.* 1416. 6—*Park.* 1456. 2.

Stems generally a foot high. *Leaves* when young fringed at the base, flat. *Berries* blue, with four slight angles, and a white pulp. Linn. *Leaves* with a network of veins underneath, sometimes slightly indented at the end, often tinged with red. Woodw. *Blossom* pink. (Taller than the preceding. *Leaves* glaucous beneath. *Bloss.* smaller than in the last. E.)

GREAT BILBERRY. BIG WHORTLE-BERRY. RASH-BERRY. (Gaelic: *Dearca roide*. E.) Moist woods, heaths, pastures, and tops of mountains. Between Hexham and Penrith. Forest of Whinfield, Westmoreland. Near Julian's Bower. Highland mountains. Near Gambleby, Cumberland. Ray. Woodward. (Moist high woods about Gwydir, near Llanrwst. Bingley. Mr. Griffith finds only the next species in the Gwydir station. The fells of Cumberland; Meldon Fell; and moor beyond Cronkley Fell, Durham. Rev. J. Harriman, in Bot. Guide. On Ben Lawers. Mr. Winch. E.)

S. April—May.†

* (The first tender leaves cannot be distinguished from real Tea, when properly gathered and dried in the shade. Willch. E.) The berries, (not unlike black currants in appearance, E.) are very acceptable, either eaten by themselves, or with milk, or in tarts. Moor game live upon them in autumn. The juice stains paper or linen purple, (but this dye requires to be fixed with alum. E.) Goats eat the plant; sheep are not fond of it; horses and cows refuse it. (The Highlanders make the berries into tarts, or jellies, which last they flavour with whisky.—Mr. Salisbury states that during the months of August and September the poor families in the vicinity of Hindhead and Blackdown in Surry and Sussex earn several hundred pounds annually by gathering Bilberries for the adjacent markets. Sievogt reports this plant as growing to a very extraordinary size in Bohemia; frequently attaining four feet in height, with a stem an inch in diameter. E.)

† Children sometimes eat the berries; but in large quantities they occasion giddiness, and a slight head-ach, especially when full grown and quite ripe. Many viators in France are said to make use of the juice to colour their white wines red. Horses, cows, sheep, and goats eat it; swine refuse it. (The inhabitants of the Swiss Alps use it for fuel. Hogg in Winch Geog. E.)

(2) *Leaves evergreen.*

V. VITIS-IDÆA. Bunches terminal, drooping: leaves inversely egg-shaped: edge obscurely denticulate and revolute: dotted beneath: (bloss. bell-shaped. E.)

Dicks. H. S.—(*E. Bot.* 598. E.)—*Fl. Dan.* 40—*Kniph.* 9—*Dod.* 770. 1—*Ger. Em.* 1415. 2—*Park.* 1456. 4—*J. B. i.* a. 522.

Is seldom found in blossom. *Curt.* *Stems* obliquely ascending, scarcely a span high, cylindrical. *Leaves* alternate. *Berries* red. *Linn.* *Leaves* with deep veins above, which are equally prominent underneath: some much smaller leaves intermixed with the rest. *Woodw.* *Leaves* sometimes obscurely serrated towards the end. *St.* *Floral-leaves* and *cups* coloured. *Filaments* very white, woolly. *Anthers* red, of two cells, each with a yellowish tube at the point. *Blossom* pale pink.

(A dwarf variety, very bushy, with leaves much crowded, and only half the size of the common plant, but having flowers full as large, is found by Mr. Murray on the Campsie hills near Glasgow, and on hills in Arran. This retains its characters in gardens, where in England it has long been known as *V. buxifolium*. *Hook. Scot.* E.)

RED WHORTLE-BERRY. (COW-BERRY. Gaelic: *Ias-nam-braoileag.* E.) Mountainous parts of Derbyshire, Staffordshire, and Yorkshire. *Ray.* Dry places in heaths, woods, and tops of mountains. *Lightfoot.* And marshy heaths. *Hudson.* Top of Skiddaw and Ingleborough. *Mr. Woodward.* Cannock Heath, Staffordshire, in a dry gravel. *Dr. Stokes.* Stiperstones, near Salop. *Mr. Aikin.* Near Witton-le-Wear. *Mr. Robson.* (Opposite Liverpool. *Mr. Shepherd.* Snowdon and other mountains in Wales. *Cronkley Fell*; and near *Egleston*, Durham. *Rev. J. Harriman*, in *Bot. Guide.* Abundant in woods above Gwydir, near Llanrwst. *Mr. Griffith.* Pentland Hills. *Mr. Maughan*, in *Grev. Edin.* E.) S. March—April.*

V. oxycoc'cus. Fruit-stalks single, or in pairs: leaves egg-shaped, very entire: edges revolute: stem filiform, trailing, not hairy: (bloss. deeply four-cleft. *Sm.* E.)

Dicks. H. S.—*Fl. Dan.* 80—(*E. Bot.* 319. E.)—*Black.* 593—*Lob. Obs.* 547. 3—*J. B. i. A.* 227. 2—*Dod.* 770. 2—*Ger. Em.* 1419—*Park.* 1229—*Ger.* 1367.

(*Stems* six to ten inches long, wiry, with numerous leafy branches. E.) *Stamens* sometimes ten. *Gough.* *Floral-leaves* two. *Linn.* *Fruit-stalks* red, semi-transparent, one flower on each. *Calyx* smooth, fringed at the points, coloured. *Blossom* four distinct petals, rolled back to the base and falling off separate. *Anthers* two-celled, each terminating in a capillary tube open at the end. *Style* red, tubular. *Summit* an open

* The berries are acid, and not very grateful, but they are eaten by the Laplanders and other country people, and are sent in large quantities from West Bothnia to Stockholm for pickling. *Linn.* They are also made into tarts, rob, and jelly, (and much esteemed by the Swedes as a corrective of animal alkali. *Encyc. Brit.*—Immersion in water for some hours is said to remove the disagreeably bitterness. The jelly is recommended for sore throats. In Derbyshire these berries are sold in the markets and called *Cowberries.* E.) Goats eat it; cows, sheep, and horses refuse it. (The leaves are occasionally subject to a neat, minute, roundish, black fungus, *Hysterium melaleucum*, bursting longitudinally. *Grev. Scot. Crypt.* 88. E.)

cavity. *Blossom* deep flesh-colour. *Berry* pale red, mottled with purple dots; when fully ripe purplish red.

CRAN-BERRY. MOSS-BERRY. MOOR-BERRY. FEN-BERRY. MARSH WHORTLE-BERRIES. (Welsh: *Llygaeron*; *Ceiros y waun*. Gaelic: *Mùileag*. *Schollera Oryccoccus*. Roth. Gmel. E.) Peaty bogs. In the North, frequent. (At Worlingham, near Beccles. Mr. Woodward. Cronkley Fell, Durham. Rev. J. Harriman. E.) Dersingham Moor, Norfolk. Mr. Crowe. Sutton Coldfield Park, Warwickshire. Ray. (In the bogs of Bin's-pool, near Selborne. White's Nat. Hist. Near Llyn Dinan, and below Bodafon uchaf, Anglesey. Welsh Bot. Lincolnshire, in great quantities. Bishop's Woods, near Eccleshall, Staffordshire.

S. June. E.)*

(MENZIESIA.† *Bloss.* one petal: *Cal.* one leaf: *Caps.* superior; partitions double, from the margins of the valves. Sm. E.)

(M. CÆRULÆA. Leaves linear, obtuse, with cartilaginous teeth: flower-stalks terminal, aggregate, simple: flowers five-cleft, decandrous.

E. Bot. 2469—Fl. Dan. 57—Fl. Ross. t. 72. f. 2—Linn. Tr. v. 10. t. 30—Gmel. Sib. v. 4. t. 57. f. 2.

A small shrub, four or five inches high. Stems branched, woody, and naked below. Peduncles two inches long, glandular, with reddish hairs. Flowers four or five at the top of the highest branch, drooping, large, ovate, bluish purple. Leaves bright shining green, not half an inch long.

SCOTTISH MENZIESIA. *M. cærulea*. Swartz. Linn. Tr. v. x. *Andromeda cærulea*. Linn. *A. taxifolia*. Pall. *Erica cærulea*. Willd. This very interesting and rare plant is supposed to have been first detected by Messrs. Brown, nurserymen of Perth, near Aviemore in Strathspey. It is said also to have been found in the western isles of Shiant.

S. June—July. Sw. Sm. Hook. E.)

(M. POLIFOLIA. Leaves ovate, revolute, cottony beneath: flowers four-cleft, octandrous, in terminal leafy clusters.

Dicks. H. S.—E. Bot. 35—Pet. Gaz. 27. 4.

Bunch terminal, simple. Flowers alternate. Peduncle with one flower. Floral-leaf strap-shaped, at the base of each flower. Calyx only a fourth

* The berries made into tarts are much esteemed, but on account of a peculiar flavour, are disliked by some. They may be kept several years if wiped clean, and then closely corked in dry bottles; or the bottles filled with water. At Longtown, Cumberland, 20l. or 30l. worth are sold by the poor people every market day, for five or six weeks together. Lightfoot. The most general name, Cranberry, probably originated from the fruit-stalks being crooked at the top, and before the expansion of the blossom, resembling the neck and head of a crane. (On poor land, especially of a boggy or peaty nature, the cultivation of Cranberries in beds has been recommended. Mr. Milne, who has reported the result of his experiments to the Horticultural Society, states that a bed five feet square may be expected to yield at least one quart of fruit; and observes that they may be made to grow with little trouble in places and on soils where few other useful plants yet known will grow to advantage. Considerable quantities of Cranberries have latterly been imported from America, but though finer fr. it to the eye, they are not, when they reach us, so piquant and palatable as our native produce. E.)

† (Named by Smith in honour of his friend Archibald MENZIES, F. L. S. who accompanied Vancouver in a voyage round the world, and returned with various botanical treasures. E.)

part as long as the blossom, deciduous. *Blossom* cylindrical-oval; mouth a little contracted, four-cleft; segments recurved. It has the habit of *Andromeda*, but the numbers of *Erica*. Linn. *Leaves* generally alternate, sometimes opposite, or even three together; dark green above, white with cottony down underneath. *Calyx* one leaf, deeply divided into four spear-shaped, hairy, viscid segments. *Blossom* purplish red, flattened at the base, marked lengthwise with four slightly elevated ridges; segments spear-shaped, waved at the edge, rolled back. (*Stems* twelve to eighteen inches high. *Caps.* of four cells, with partitions from the edges of the valves; which is never the case in any true *Andromeda*; nor have the *flowers*, as far as I have seen, more than four segments. Sm. E.)

(IRISH MENZIESIA. IRISH WORTS, or MOOR-WORT. *M. polifolia*. Juss. Ait. Sm. *Erica Daboecia*. Willd. With. *Erica Daboeci*. Linn. Sp. Pl. Huds. *Andromeda Daboecia*. Linn. Spongy wet uncultivated land on the mountains of Mayo, and Hiar Connaght. Ray. On Croagh Patrick, in the county of Mayo. A. B. Lambert, Esq. Fl. Brit. Very abundant in the district of Cunnemara, Galway. Wade. Pl. Hib. S. June—July. E.)

(CALLUNA. *Bloss.* one petal: *Cal:* double; each of four leaves: *Caps.* superior; partitions from the column, alternate with the valves. Sm. E.)

C. VULGARIS.

Curt. 297—(*E. Bot.* 1013. E.)—*Kniph.* 11—*Walc.*—*Fl. Dan.* 677—*Matth.* 152—*Fuchs.* 254—*Trag.* 952—*Dod.* 767. 1—*Ger. Em.* 1380. 1—*Park.* 1182. 5—*Lonic.* 1. 37. 1—*Ger.* 1196. 1. 2—*Park.* 1480. 1.

(*Stems* very woody, tortuous, one to two feet high. *Leaves* minute, closely imbricated in four rows, glabrous. *Outer calyx* of four small green leaves. *Anthems* not protruding beyond the blossom. *Style* longer. E.) The *calyx* has close to its base four or five circular, concave, coloured leaves, fringed with soft hairs; and on the outside of these two or three others partly resembling these, and partly the leaves of the cup. *Proper cup* coloured, so as in every respect to resemble the *blossom*, which is of a pale rose colour, sometimes white, not distended; four or five-cleft. *Seed-vessel* enclosed by the *proper cup*.

(With white blossoms on Teesdale Moors. Mr. Winch. E.)

Var. 2. Leaves and branches hoary.

Envil Common, Staffordshire. Dr. Stokes. Birmingham Heath, (now enclosed. E.)

COMMON HEATH or LING. GRIG in Shropshire. HEATHER in Scotland. (Irish: *Fraogh. Grig.* Welsh: *Grug cyffredin.* Gaelic: *Fraoch.* E.) Heaths and woods. S. June—Aug.*

* This plant, but little regarded in happier climates, is rendered subservient to a great variety of purposes, in the bleak and barren Highlands of Scotland. The poorer inhabitants construct walls for their cottages, with alternate layers of Heath, and a kind of mortar, made of black earth and straw, the woody roots of the Heath being placed in the centre, the tops externally and internally. They also make their beds of it, by placing the roots downwards, and the tops only being uppermost, are sufficiently soft to sleep upon.

ERICA.* (*Bloss.* of one petal: *Cal.* four-leaved: *Caps.* superior; partitions simple, from the centre of each valve. Sm. E.)

("Of this, old Scotia's hardy mountaineers
Their rustic couches form; and there enjoy
Sleep, which, beneath his velvet canopy,
Luxurious idleness implores in vain." C. Smith.

* * * "the stranger's bed
Was there of mountain *Heather* spread,

Nor vainly did the heath-flower shed
Its moorland fragrance round his head." Scott.

If it be true, as there is reason to believe, that the ancients were wont to repose on the leaves of particular trees, not doubting their powers of inspiration, as Agnus-Castus to compose the troubled mind, the laurel to excite poetic fire, or the bay to awaken visions of glory, why may not the heather couch not merely refresh the wearied limbs of the "rough sons of freedom," but inspire the noblest sentiments into minds scarcely less imaginative, and nothing lacking in credulity. E.)

Cabins are thatched with it. In the island of Ilay, ale is frequently made by brewing one part malt and two parts of the young tops of Heath; sometimes hops are added. Boethius relates, that this liquor was much used by the Picts. Penn. Tour, 1772, p. 229. Woollen cloth boiled in alum water, and afterwards in a strong decoction of the tops of Heath, comes out a fine orange colour. In England besoms are made of it, and fagots to burn in ovens, or to fill up drains that are to be covered over. (In the New Forest and adjacents, Hants, many poor families obtain a decent livelihood by the manufacture of such besoms, which are sold to the coasting traders at about eighteen pence per dozen, being cheaper and nearly as durable as those made from Birch. E.) Sheep and goats will sometimes eat the tender shoots, but they are not fond of them. (The grouse and heathcock feed upon them, and, as Pennant remarks, here we have a particular provision of nature, in the construction of the seed-vessel, &c. to preserve the seeds a whole year, and ensure a constant supply. E.) Bees extract much honey from the flowers,

("Here their delicious task, the fervent bees,
In swarming millions, tend: around, athwart,
Through the soft air the busy nations fly,
Cling to the bud, and with inserted tube
Suck its pure essence, its ethereal soul:

And yeKow load them with the luscious spell."

But where Heath abounds the honey has a reddish cast and is coarse. (In the north of Scotland ropes are made of it as strong, as durable, and nearly as pliant as those of hemp. Garnett's Tour, p. 147. This plant has also been found, by boiling, to afford a good liquor for tanning leather, by the use of which this process is considerably cheapened and improved. This is the more common kind; the other species possess qualities nearly similar. Heath can only be extirpated by paring and burning. Prof. Hooker recommends it as an edging for garden borders. It affords a favourite receptacle for Dodder. "*Calluna vulgaris*, *Erica cinerea* and *Tetralix*, give a peculiar character to the moors and fells in the north of England, these flourish from 100 to 8,000 feet above the level of the sea, but never on calcareous soil; which circumstance occasions the striking difference between our heaths and the Yorkshire Wolds, but more especially the downs of the more southern counties, where the sub-stratum is chalk." Winch Geog. Dist. In certain wild and peaty spots, it may be found to justify the description of

"Heather black that wav'd so high
It held the copse in rivalry."

(From *ipsa* law, to break, it being formerly in repute as a lithontriptic. E.)

(E. VAGANS. Anthers beardless, and style protruded : bloss. bell-shaped : fruit-stalks with one flower, crowded : leaves in fours. E.)

E. Bot. 3.

Stems woody, (one and a half to two feet high ; E.) spreading, branched, nearly cylindrical. *Leaf-stalks* very short, pressed close to the stem, glandular at the base. *Leaves* strap-shaped, blunt, pointed, edges rolled back so as to form a groove along the middle on the underside. *Flowers* axillary, numerous, mostly pointing one way. *Fruit-stalk* half the length of the flower, with a gland-like joint, and two floral-leaves. *Blossom* from dark purple to rose red, and sometimes white. *Anthers* colour of a mulberry, deeply cloven, projecting out of the blossom.

Extensive districts are often purposely fired that the sheep may afterwards enjoy the advantage of young herbage, instead of the tough old heather plants; and to such vivid conflagration does the author of Marmion thus compare the impetuous charge of conflicting warriors.

"Not faster o'er thy *Heathery* braes,
Balquidder, speeds the midnight blaze,
Rushing in conflagration strong
Thy deep ravines and dells among,
Wrapping thy cliffs in purple glow,
And reddening the dark lakes below."

Few characters are more acutely sensible to the peculiar local features of their native clime, than the Highlanders of North Britain, (wild "wandering o'er their blooming *heather*,") whose tender affection for each familiar spot, indelibly impressed on the memory by early and fond associations, is oft by incidents trifling in themselves irresistibly revived in regions most remote : nor has the stout heart of the bravest of the brave, which had fearlessly faced destruction on the breach, or at the cannon's mouth, in gentler mood failed to yearn, (as the amiable Swiss), on hearing a national air, or beholding the favourite badge of his clan, even the simple *Heather*, 'till sickening at the thought of fond hopes deferred, or at the retrospect of the parting scene,—when on the

—— "mountains fell the rays,
And as each heathy top they kiss'd,
It gleamed a purple anemist." Marmion.

But no poet has addressed this interesting little plant with a more genuine glow of patriotism than Mrs. Grant.

"Flower of the wild ! whose purple glow
Adorns the dusky mountain's side,
Not the gay hues of Iris' bow,
Nor garden's artful, varied pride,
With all the wealth of sweets could cheer,
Like thee, the hardy mountaineer.

Flower of his heart ! thy fragrance mild,
Of peace and freedom seems to breathe ;
To pluck thy blossom in the wild,
And deck his bonnet with the wreath,
Where dwelt of old his rustic sires,
Is all his simple wish requires.

Flower of his dear-loved, native land !
Alas ! when distant, far more dear !
When he from some cold foreign strand
Looks homeward through the blinding tear,
How must his aching heart deplore
That home and thee he sees no more !" E.)

CORNISH OR DOUBLE-TIPPED HEATH. (*E. multiflora*. Huds. E.) *E. didyma*. With. Ed. ii. Heaths. (The magnesian soil of the serpentine formation is thought to be peculiarly congenial to the production of this plant. Guide. E.) Goonhelly Downs, Helston and the Lizard Point, Cornwall, (in profusion, E.) Ray. Near Pendarves, on the road from Camborn to Hoyle, in the low grounds between Tregothan and Connor Downs. Mr. Stackhouse. (Heath between Axminster and Lyme. Miss Webster, in Bot. Guide. Near Newton, Glamorganshire. Evans. E.)
P. June—Aug.

E. TETRA'LIX. (Anthers with two awns at the base: style nearly concealed: bloss. ovate: leaves fringed, four in a whorl, ciliate: flowers capitate. E.)

Dicks. H. S.—Curt.—(*E. Bot.* 1014. E.)—*Fl. Dan.* 81.

(*Stems* branched, woody, erect, six to twelve inches high. *Calyx* fringed and furnished with two leaves or bracteas at its base. *Anthers* concealed, egg-shaped, spurred. *Stigma* globular. E. Bot. E.) *Leaves* sometimes five in a whorl. *Blossom* large, pendent, pointing one way, from pale rose red to quite white. (Fringes of the leaves tipped with globules. Purton. E.)

CROSS-LEAVED HEATH. (Welsh: *Grug crocsddeiliog*. E.) Moist heaths, Norfolk. Mr. Woodward. Hartlebury Common, Worcestershire. Mr. Ballard. Heaths and bogs near Manchester. Mr. Caley. (Childwall and Woolton Commons, near Liverpool. Dr. Bostock. Studley Common, Warwickshire. Astwood, Worcestershire; and with white flowers on Coleshill Heath. Purton. Anglesey, with other species, and not uncommonly with white blossoms. Welsh Bot. Pentland Hills. Greville. E.)
P. July.*

E. CINE'REA. (Anthers with two serrated appendages at the base: leaves three in a whorl: style somewhat exserted: stigma capitate: bloss. ovate: branches hoary. E.)

Curt.—(*E. Bot.* 1015. E.)—*Fl. Dan.* 38—*Walc.*—*Clus.* i. 43. 2—*Lob. Obs.* 620. 1—*Ger. Em.* 1382. 1—*Park.* 1483. 8—*Ger.* 1198. 7.

(*Stems* bushy, a foot high or more, woody. *Leaves* fleshy, strap-spear-shaped, flat above, with a dorsal furrow. *Blossoms* bluish purple, in long, clustered, drooping racemes, membranous and enduring. *Style* crimson. The crest-like appendage to the anthers would alone distinguish this species. E.)

(As others of its family, occasionally found with white blossoms; in Warwickshire. Purton. E.)

FINE-LEAVED HEATH. (Welsh: *Grug lledhyd*. Gaelic: *Fraoch-badain*. E.) Dry heaths and groves. Heaths near Yarmouth. Mr. Woodward. In Staffordshire and the north of Worcestershire. Stokes. (Childwall and Woolton Commons, and Knot's-hole, near Liverpool, as common as *E. vulgaris*. Dr. Bostock. Pentland Hills. Greville. E.)

S. June—Aug.†

* (A handsome hardy little plant, flowering twice in the year, and worthy of rock culture. E.)

† (Used for various purposes as the former species. Grouse and ptarmigan feed on the tops. E.)

POPULUS. Flowers barren and fertile in catkins on distinct plants. *Calyx* scales ragged: *Bloss.* turban-shaped, mouth entire, oblique. *Fert. Fl. Summit* four-cleft: *Caps.* two-celled: *Seeds* many, downy.*

* (Virgil, Ovid, Horace, Catullus, and other Roman poets, have in various passages celebrated the Poplar; nor has it been less distinguished by Homer. These descriptions probably allude, (though not exclusively), to the aspiring Lombardy or Po Poplar, which rises from the plains of Italy to an astonishing height, at least rivaling in majestic simplicity the far-famed Cypress. These towering trees were deemed sacred to Hercules, "*Populus Alcideæ gratissima*," and were considered emblems of courage, as the legend has it, in consequence of his vanquishing Cacus in a Poplar grove; but, according to our interpretation, from his having destroyed the monster with the massive trunk, fit baton for a super-human power. Certain it is that the votaries of that deity were decked with chaplets entwined from such trees; and the altars adorned in like manner:

"Tum Salii ad cantus, incensa altaria circum,
Populeis adsunt evincti tempora ramis." *Æn.* viii.

"A double wreath Evander twin'd,
And *Poplars* black and white his temples bind. Virg.

Poplars in general are naturally addicted to moist fertile soils or the banks of rivers,

"*Populus* in fluviis—"

"The *Poplar* trembling o'er the silver flood:"

Though they do not refuse to flourish in dryer situations. So much sustenance, however, do they derive from moisture, that by the vast extension of the roots of these aquatics, and their power of imbibing water, boggy places have been in a considerable degree drained, and also superficially improved by the accumulated foliage. In waste lands, unfit for tillage, Poplars may be grown to advantage, the several kinds affording useful building materials, the more desirable for the erection of cottages and stables, as little liable to take fire. "A red-hot poker falling on a board of Abele," affirms Mr. Salisbury, "would burn its way through it without causing more combustion than that of the hole through which it passed." Hunter in Evelyn observes, "boards made of Poplar are durable if kept dry, and the poles make tolerable spars after the bark has been carefully removed;" adding a remark, the accuracy of which the Editor can confirm, that "the bark, when permitted to remain upon poles of soft wood, harbours animalculæ, which in time eat away the strength of the timber." The buds in early spring, when pressed between the fingers, yield a balsamic resinous substance, which, extracted by spirit of wine, smells like storax. The cotton down which covers the seeds was, by Schæffer converted into paper, but other more abundant materials are obviously preferable. "Groves of Poplar, (and also of Willow), even in England, in hot calm weather, exhibit the phenomenon of drops of clear water trickling from their leaves, like a slight shower of rain: which must be considered as a condensation of their insensible evaporation." Wonders of the Vegetable Kingdom. In the cultivation of dioecious vegetables, (and the remark is particularly applicable to several of our forest trees), the advantage of intermixing the stamiferous and pistilliferous kinds has been experimentally proved, rendering the plants far more vigorous than when they are kept entirely separate. E.)—The several species support the following insects: *Sphinx Populi*, *Phalæna Vinula*, *Populi*, *fascelina*, (Orange Underwing Moth): *Aphis Populi*: *Chrysomela Populi*, *Populi*: *Curculio Tortrix*: *Cimex Populi*. (Also on the Poplar may be found *Geometra rufifasciata*, *Noctua libatrix*, *Notodonta palpina*, *trepida*, and *ziczac*, *Cerura Vinula*, *Noctua flavicornis*, *Clostera curtula*, *Phalæna* (*Noctua*) *gemina*, which towards October prepares for transformation by enclosing itself between two leaves whose edges it unites by numerous threads; and the larva of *Sphinx apiformis* and *vespiformis* feed in the bark of the Poplar tree, the latter changing to a pupa in the cavity it has eaten out. From the resinous buds of different species of Poplar, Fir, and Birch, the bee provides the gummy material called *propolis*, which she employs not only in finishing the combs, but also in rendering every chink or orifice impervious to weather or the enemy. On the leaves of various species of Poplar, as also Willows, &c. may be fre-

P. ALBA. Leaves roundish, heart-shaped, toothed, angular: cottony underneath: (catkins ovate. E.)

Hunt. Evol. 208; i. p. 201. Ed. ii.—(E. Bot. 1618. E.)—Spect. de la Nat. 31. 2. at ii. p. 292—Nat. Delin. 20. 2. at ii. p. 312—Matth. 136—Cam. Ept. 65—J. B. l. b. 160. 1—Ger. 1301. 1—Dod. 835—Ger. Em. 1486. 1—Park. 1410. 1—Lob. Obs. 609. 1—Ic. ii. 193. 1—Gars. 467. A. a.

Tree very tall. Leaves without glands, either at the base or serratures. Flowers exactly similar to those of *P. tremula*. Linn. Leaves smooth and blackish green above, with a white dense cotton underneath. Ray. Leaf-stalks flattened, and grooved on each side. Leaves less circular than triangular. (Roots spreading horizontally, and throwing up numerous young plants. Bark smooth, greenish grey, blended with darker shades, and highly ornamental. E.)

WHITE POPLAR. ABELE TREE. (Welsh: *Aethnen wen*. E.) Hedges, woods, and near brooks. T. March.*

Var. 2. Leaves smaller. Ray. (not snow-white, but grey underneath. E.)

quently observed *Erysiphe adunca*. Grev. Scot. Crypt. 296. "Primary flocci effused, white, the radical ones simple, straight, equal in length, closely hooked at the apex, at length incurved and elevated." Before maturity appearing only as a delicate, effused, white web. Considered "the most beautiful of the genus; under a pocket magnifier resembling little sparkling stars." The leaves of *P. nigra* and *tremula* are subject to *Uredo Populi*, "scattered, slightly elevated, roundish, orange coloured." Part. t. 27; also to *Erysiphe Populinum*, Grev. Scot. Crypt. 250, "in patches, scattered, semiglobate, purplish, changing to reddish brown: filaments not very perceptible." E.)

* (Neither this species nor *P. nigra* are considered aborigines. Turner, in 1568, says of *White Aspen*, "I remember not that ever I saw it in any place in England." Gerard, thirty years later, observed a few, and there appears to be no old English name for these trees. *Abele*, is derived from the low Dutch *abeel*, descriptive of its hoary or aged colour. —A general importation of these trees, according to Hartlib, took place about 1659, a short time previous to which date, ten thousand Abeles were brought from Flanders, and transplanted into several English counties. The full-grown trees are truly beautiful, both in trunk, foliage, and general form. Evelyn states "the wood of the White Poplar is sought of the sculptor. Of this material they also made shields of defence in sword and buckler days." The same author adds, "In three years they will come to an incredible altitude; in twelve be as big as your middle; and in eighteen or twenty arrive at full perfection: for which celerity we may recommend them to such late builders as seat their houses in naked and unsheltered places, and that would put a guise of antiquity upon any new enclosure, since by these, whilst a man is on a voyage of no long continuance, his house and lands may be so covered as to be hardly known at his return." One of the most picturesque specimens of this tree that has fallen under our observation, grows beside a lane which bounds the pleasure grounds of T. R. Thornton, Esq. at Brockhall, Northamptonshire. Mr. Winch informs us that the White Poplar is remarkable for withstanding the north-east winds, so detrimental to vegetation on the coast of Northumberland and Durham. The Abele deserves particular notice on account of the virtue of its bark in curing intermitting fevers; (vid. a paper by the Rev. — Stone in Phil. Tr. v. liii.) an instance of the manner in which nature has adapted remedies to diseases, such fevers being most prevalent in wet countries, and this tree growing principally in the like situations. This bark will also tan leather. Poplar and Abele were classed by Vitruvius among the timbers "quæ maximè in ædificiis sunt idoneæ." E.) The Abele loves low situations, and flourishes best in clay. It grows quickly, and bears cropping, but is unfavourable to pasturage. The wood is soft, white, and stringy, and makes good wainscotting, being but little subject to swell or shrink. Floors, laths, packing, boxes, and turners' wares are made of it. Horses, sheep, and goats eat it. Cows are not fond of it.

(*E. Bot.* 1619. *E.*)—*Lob. Ic.* ii. 193. 2—*Ger. Em.* 1487. 5—*Park.* 1410. 2—*J. B. i. b.* 160. 2.

(GREY POPLAR. *P. canescens*. Sm. Not uncommon in moist situations. *E.*)*

P. TREM'ULA. Leaves nearly circular, toothed, smooth on both sides : (leaf-stalks compressed, young branches hairy. *E.*)

(*E. Bot.* 1909. *E.*)—*Kniph.* 6—*Blackw.* 248. 2—*Matth.* 139—*Cam. Epit.* 67—*J. B. i. b.* 163—*Ger.* 1302. 3—*Dod.* 836. 2—*Lob. Obs.* 610. 1. and *Ec.* ii. 194. 2—*Ger. Em.* 1487. 3—*Park.* 1411. 4—*Trag.* 1083—*Lonic.* i. 26. 2.

(A rather large tree, though sometimes dwarfish, the bark smooth and greyish. *Roots* running horizontally, and throwing up numerous young plants. *Leaves* on long petioles, trembling with the slightest wind. *Fertile cutkins* near two inches long. *Germens* roundish. *Grev. E.*) *Leaf-stalks* flattened towards the end, whence the trembling of its leaves. *Gouan.* As also in some few other instances. The plane of the leaf-stalks is at the right angle to that of the leaves, which allows the leaves a much freer motion than could have taken place had their planes been parallel. *St.* *Leaves* more circular than in the preceding.

ASP. (From the German, *Espe*, a Poplar of any kind. *E.*) ASPEN TREE. TREMBLING POPLAR. (Welsh: *Aethnen*; *Cryddethnen*. Gaelic: *An Criothann*. *E.*) Moist woods, and in boggy ground. T. March—April.†

* (Of slower growth than the Abellè-tree; wood much firmer, making good floors, and not readily taking fire. Sm. *E.*)

† The Asp will grow in all situations and in all soils, but worst in clay. It impoverishes the land; its leaves destroy the grass, and the numerous shoots of the roots, (only to be remedied by stocking up and trenching with the spade, *E.*) spread so near the surface of the earth, that they will not permit any thing else to flourish. It bears transplanting well. The wood is extremely light, white, smooth, woolly, soft; durable in the air. The bark of the young trees is made into torches. The leaves and leaf-stalks are sometimes set with red globular substances, about as large as a pea, which are the nests of *Tipula Juniperinæ*, a long-legged fly. (*Balaninus tremula* also frequents this tree. *E.*) Sheep and goats browse upon it; horses and swine refuse it. (Linnaeus informs us that the bark is a favourite food of beavers. Upon a mechanical principle above explained,

—“rustling turn the many-twinkling leaves
Of *Aspen* tall.”

And hence to tremble as an *Aspen*-leaf;

—“His hand did quake
And tremble like a leaf of *Aspen* green.” *Spencer.*

And again,

“Why tremble so broad *Aspen* tree?
At rest thou never seemst to be,
For when the air is still and clear,
Or when the nipping gale increasing,
Shakes from thy boughs soft twilight's tear,
Thou tremblest still, broad *Aspen* tree,
And never tranquil seemst to be.”

Though this peculiarity is obviously occasioned by the natural conformation of the plant, superstitious ignorance has attributed the incessant agitation to a far different cause, no less than the consciousness of its species having supplied the identical cross on which the Saviour suffered. Nor ought we to omit, that, with almost as little probability, it has been most calumniously insinuated that of the leaves of the Asp were made *women's tongues*, “which,” according to unquestionable authority, (and, may we be permitted to add, most happily for the edification of the ruder sex), “do seldom cease wagging.” *E.*)

P. NIGRA. Leaves deltoid, pointed, serrated, smooth on both sides.

(E. Bot. 1910. E.)—Blackw. 548, and 248. 1—Lonic. i. 26. 1—Matth. 137—Cam. Epit. 66—Park. 1410. 3—J. B. i. b. 155—Lob. Obs. 609. 2, and Ic. ii. 494. 1—Dod. 836. 1—Ger. Em. 1486. 2—Gars. 467. B. b.—Ger. 1301. 2—Trag. 1080.

(A tall tree with a smooth bark; roots not throwing up young plants. Leaves dark green, less serrated towards the base than the apex. Germs ovate. Grev. E.) Leaves without any glands at the base, but the serratures glandular on the inner side. Stamens as many again as in *P. tremula*. Linn. Stamens sixteen. Leers. Leaf-stalks yellowish.

BLACK POPLAR. (Irish: *Craun na crih*. Welsh: *Aethnen ddŵ*. E.) Near rivers and wet shady places, in woods, plantations, &c.

T. March.*

* This tree loves a moist black soil, grows rapidly, and bears cropping. The wood is not apt to splinter. The bark, being light like cork, serves to support the nets of fishermen. The red substances like berries upon the leaf-stalks, as large as a cherry, gibbous on one side, and gaping on the other, are occasioned by an insect called *Aphis bersaria*, (which, with its brood, inhabits these angular *utriculi*. E.) Horses, cows, sheep, and goats browse upon the Black Poplar. (The inner bark is used by the Kamschatkades as a material for bread; the roots have been observed to dissolve into a gelatinous substance, and to be coated over with a tubular crustaceous spar, called by naturalists *osteocolla*, formerly imagined to promote the callus of fractured bones. In the "Wonders of the Vegetable Kingdom" we find it correctly remarked, "that the seed of the Black Poplar is one of those peculiarly adapted for dispersion, and is carried through the air by the assistance of a spherical body, similar to a little bullet, having a long tail affixed to it, from the extremity of which descends obliquely an appendage of considerable length. When detached from the parent tree, the wind carries it away, spinning round and round. In this manner it sometimes proceeds to a considerable distance, and if by accident it falls into the water, the appendage sinks about an inch, serving as ballast to the tail and little leaf; which, when brought into a vertical position, answers the purpose of a mast and sail."

"Arise, ye winds, 'tis now your time to blow,
And aid the work of nature: On your wings
The pregnant seeds conveyed shall plant a race
Far from their native soil."

The Black Poplar is said to attain to a stately size on the banks of the ancient Eridanus, and there perpetually to distil its amber tears—"Inde fluunt lachrymæ." Hence has this tree been usually identified with the Heliades, the "sprouting daughters of the Sun," who, while inconsolable for the hapless fate of Phaeton, were, (on the highest classical authority), metamorphosed into trees, but of what particular kind, is not so obvious; though, were we to indulge conjecture in the spirit of modern gallantry, we should be inclined rather to favour the pretensions of that species so felicitously expressive of female elegance,

"As tall and as straight as the Poplar tree,"

which also flourishes beside the Po, and indeed deserves its cognomen from that country. But leaving such matters to the versed in classic lore, we descend to facts indisputable. At Bury St. Edmund's grows a Black Poplar rivalling even those of Italy, fit emblem of a "nymph transformed," even Phaethusa herself, which, as represented in Strutt, measures ninety feet in height, fifteen feet girth, and contains 551 feet of solid timber. The boards from such trees afford durable and neat looking floors for rooms, though, from their soft nature, too susceptible of external impressions. Brooms are made of the twigs, and in some places sheep are fed upon the dried leaves in winter. Paper has been manufactured from the cottony down of the seeds. In Flanders a prodigious quantity of clogs are made from Poplar wood, to supply all Holland.

Aquatic trees are generally among the first to relinquish their leafy honours, and that too without contributing in any very obvious degree to the brilliant effect of the

DAPHNE.* *Calyx* generally none: *Bloss.* one petal, regular, four-cleft, funnel-shaped: *Drupa* like a berry, one-celled, superior, (one-seeded. E.)

D. MEZE'REUM. Flowers sessile, naked, on the stem, mostly three together: leaves spear-shaped, deciduous.

(E. Bot. 1381. E.)—*Fl. Dan.* 268—*Sheldr.* 62—*Ludw.* 63—*Blackw.* 582—*Kniph.* 1—*Woodv.* 23—*Fuchs.* 227—*J. B. i.* 566—*Dod.* 364. 2—*Lob. Obs.* 199. 4—*Ger. Em.* 1402. 2—*Park.* 302. 3.

(*Stem* bushy, four or five feet high, with tough, alternate, pliant branches; leafy while young. *Leaves* stalked, smooth, two inches long, appearing after the flowers, which are highly fragrant. *Berries* scarlet, varying to yellow or orange. Sm. E.) The terminal buds produce leaves; the lateral buds flowers; which open very early in the spring, often in winter; and are so thick set as entirely to hide the branches. Their colour a beautiful red, Linn. (*Bloss.* sometimes white. E.)

MEZEREON. SPURGE OLIVE. DWARF BAY. Woods near Andover. Mr. Woodward. Needwood Forest. Mr. Pitt. (Matlock, Chee Tor. Mr. Coke. In divers parts of Cranbourne Chase. Pulteney. In Selborne Hanger, among the shrubs at the south end above the cottages. White. (Naturalized among the Tunstall hills, south of Sunderland. Mr. Winch. Eastham and Stanford, Worcestershire. Rev. E. Whitehead. Witchwood Forest, Oxon. Mr. J. Wheeler, in Purl. Stream side in the dingle above Ebworth fish ponds, Painswick, but rare. Mr. O. Roberts. Mr. Woodward informs me that this plant is no longer to be found near Laxfield. E.) S. Feb.—March.†

— "thousand tints

Which Flora, dress'd in all her pride of bloom,
Can scarcely equal."

Yet, as in the vernal chorus of the grove, the rook, the jay, the daw, discordant in themselves, together blend in one harmonious whole, so the more sombre hues advantageously combine to depict the declining year. And, to those who love to moralize on the changing forms of material existence, the sacred leaves falling around us, or strewed in myriads beneath our feet, would offer in their desolation a salutary admonition to the sons of mortality: for so, indeed, do the pleasures and pursuits of this transitory world change their gay complexion in the autumn of our youth: and thus, do even youth, beauty, and fortune, when the appointed season shall arrive, waste and wither like a perishing leaf. Moreover, these silent, but impressive monitors, would lead us to foresee, and, timely to prepare for that storm which is speedily to sweep the strongest from every fair and flourishing prospect on earth, as the autumnal blast scatters the withered leaves: thus powerfully enforcing the necessity of resting our better hopes on that Tree of Life,

"Which alone, for ever vernal,
Bears a leaf that shall not fade." E.)

* (So named after the nymph, beloved of Apollo, (the history of whose metamorphosis may be read in Ovid), and in compliment to certain species which resemble the bay. E.)

† ("Nature, whose works never cease to excite our admiration," observes Phillips, "astonishes us by the wonders contained in the buds of this plant, where not only the flowers, but the parts of fructification may be distinctly seen the year before they unfold themselves." Mezereon, clustered with crimson blossoms, is rendered most ornamental in the shrubbery during the severest season.)

"Though leafless, well attir'd and thick beset
With blushing wreaths, investing every spray."

Nor is its agreeable scent, unacceptable at a time when few flowers are to be gathered.

D. LAURE'OLA. (Clusters axillary, simple, each of about five flowers, drooping, shorter than the smooth, obovate-lanceolate, evergreen leaves: calyx obtuse. Sm. E.)

(*Hook. Fl. Lond. E.*)—*Jacq. Austr.* 183.—*E. Bot.* 119.—*Walc.*—*Blackw.* 62—*Lob. Obs.* 200. 1.—*Ger.* 1404. 1.—*Park.* 205. 1.—*Ger.* 1219. 1.—*Dod.* 365.—*Lob. Obs.* 200. 2, &c.—*J. B.* i. 564.

(*Stem* erect, two or three feet high, cylindrical, but little branched, naked below, bearing at the summit of each branch a tuft of spreading, bright green, shining, smooth leaves. *Flowers* yellowish green, each accompanied by a bracteæ, drooping. *Perianth* infundibuliform, the limb four-cleft. *Stam.* in two rows. *Berry* ovate, black. Grev. E.)

SPURGE LAUREL, LAUREL MEZEREON. (WOOD LAUREL. Welsh: *Clust yr Ewig.* E.) Woods and hedges. Common in Yorkshire. Needwood Forest; sometimes with variegated leaves. M. Pitt. (About Hil-

Such an empurpled and perfumed branch had the power to excite the elegant muse of the author of *Psyche*, to an almost expiring effort.

"Odours of spring, my sense ye charm
With fragrance premature;
And, mid these days of dark alarm,
Almost to hope allure.
Methinks with purpose soft ye come
To tell of brighter hours,
Of May's blue skies, abundant bloom,
Her sunny gales and showers."

It is extremely difficult at this period to determine what plants may strictly be deemed aboriginal to Britain. The claim of Mezereon would appear to rest on slight authority, especially when we consider that it entirely escaped the researches of Turner, in 1568, and subsequently of Gerard, and the indefatigable Ray. E.) The branches afford a yellow dye. An ointment prepared from the bark or the berries has been successfully applied to ill-conditioned ulcers. The whole plant is very corrosive; six of the berries killed a wolf. A woman gave twelve grains of the berries to her daughter, who had a quartan ague; she vomited blood, and died immediately. Linn. A decoction made of two drams of the cortical part of the root, boiled in three pints of water till one pint be wasted: and this quantity, drunk daily, is found very efficacious in resolving syphilitic nodes, and other indurations of the periosteum. See Dr. Russell in *Med. Obs.* iii. p. 189. (And hence the efficacy of the Lisbon Diet Drink, according to the testimony of Dr. Donald Monro. E.)—The considerable and long-continued heat and irritation that it produces in the throat, when chewed, made me first think of giving it in a case of difficulty in swallowing, occasioned by a paralytic affection. The patient was directed to chew a thin slice of the root as often as she could bear to do it; and in about two months she recovered her power of swallowing. This woman bore the disagreeable irritation, and the ulceration its acrimony occasioned, with great resolution; but she had been reduced to skin and bone, and for three years before had suffered extremely from hunger, without being able to satisfy her appetite: for she swallowed liquids very imperfectly, and solids not at all. The disease came on after lying in.—(*Daphne Mezereum*, *Veratrum album*, and *Menispermum cocculus*, are used by fraudulent brewers to communicate an intoxicating quality and strong taste to weak beer; a practice worthy of execration; and here, and in many other countries, forbidden under severe penalties. Month. Mag. Dr. Swediaur informs us that the antidote to this potent poison is camphor. Dr. Home declares Mezereon to be a more powerful deobstruent than even mercury, highly successful in syphilitic and other tumours, but not so in scrofula. In France and the Peninsula the bark is applied to the skin to promote a discharge as a perpetual blister; and is also occasionally serviceable when masticated, as a remedy for tooth-ach. The red berries prove attractive to singing birds, especially to the several species of Finch, (*Loxia*).

ton Castle, near Sunderland, and Castle Eden Dean, Mr. Winch. Frith Wood, and other Beech woods, near Painswick. Mr. O. Roberts. In a wood near Tyfry, Anglesey. Welsh Bot. Stank-hill farm, near Warwick; Warwick Castle mount. Perry. In Selborne-Hanger and the High-wood, Hants. White's Nat. Hist. Bothwell-woods, near Glasgow. Hopkirk, Roslin. Grev. Edin. In the forest around Neville Holt, Leicestershire. E.) S. March—April.*

- (*D. Cneorum*. Flowers terminal, sessile, crowded; leaves spear-shaped, mucronate; berry juiceless: said to have been once found about two miles from Beddgelart, by the road leading to Carnarvon, not far from the place where the ascent to the summit of Snowdon commences, has entirely eluded the researches of Mr. Griffith and other Botanists familiar with that district. E.)

DIGYNIA.

CORYLUS. B. and F. flowers on the same plant: *Bloss.* none.

B. *Cal.* one leaf, three-cleft, resembling a scale, containing one flower.

F. *Cal.* two-leaved, ragged: *Nut* egg-shaped, (one-celled, invested with the coriaceous calyx. E.)

C. AVELLANA.† (Stipule ovate, obtuse: leaves roundish, heart-shaped, pointed: twigs hairy. E.)

(*Hook. Fl. Lond.*—*E. Bot.* 723. E.)—*Blackw.* 293.—*Hunt. Evel.* 220; i. p. 213. *Ed.* ii.—*Kniph.* 1.—*Lonic.* i. 30. 1.—*Trag.* 1096.—*Matth.* 281.—*Park.* 1415. 5.—*Gars.* 223.—*Spect. de la Nat.* 32. 2. in ii. p. 292.—*Nat. Delin.* 20. 4. in ii. p. 312.—*Lob. Ic.* ii. 192. 2.—*Ger. Em.* 1438. 2.—*Ger.* 1250. 2.—*Fuchs.* 398.

(A small tree; leaves appearing after the flowers. *Sterile* flowers in drooping catkins, one to two inches long. E.) The exserted styles being of a vivid crimson have a beautiful appearance in March, when the bud-like catkins expand. Woodw. *Catkins* in pairs, yellowish green. *Scale*, the middle

* Very happy effects have been experienced from this plant in rheumatic fevers. It operates rather severely as a cathartic. It is an efficacious medicine in worm cases; and upon many accounts deserves to be better known to physicians; but in less skilful hands it would be dangerous, as it is possessed of considerable acrimony. The whole plant has the same qualities, but the bark of the root is the strongest. Dr. Alston fixes the largest dose at ten grains. (Mr. Salisbury records the case of a man who took the powdered leaves medicinally, and died in consequence in a few hours in great agony.—The Wood-laurel, being hardy and of ready growth, forms the stocks on which the more ornamental species of *Daphne* are grafted. The flowers diffuse a grateful odour, especially in an evening, and will be acceptable in apartments to those who delight in floral perfumes. The ripe black berries are ornamental, but are so favourite a food with the smaller birds, that they seldom long remain. E.)

† (From *Avellino*, a city of Naples, in the neighbourhood of which nuts (the round Spanish), are cultivated in great abundance, and to which part of Italy they were originally introduced from Pontus, and thence known to the Romans by the name of *Nux Pontica*, till afterwards changed to *Nux Avellana*. E.)

segment pointed at the end. *Leaves* oval, serrated, wrinkled. *Catkins* green, when out of flower brown.

HAZEL-NUT TREE. (Irish: *Coll*. Welsh: *Coll-lwyn*. Gaelic: *An Cal-tain*. E.) Woods and hedges. T. March—April.*

* It is frequently planted in hedges and in coppices, to make charcoal for forges. The owners cut them down in equal portions in the rotation of sixteen years, and raise regular revenues out of them: often more than the rent of the land, for freeholders of 15*l.* or 25*l.* per ann. are known to make constantly 60*l.* a year from their woods. Penn. Tour. 1772. p. 29.—The wood is used for fishing-rods, walking-sticks, crates, hoops for barrels, &c. the shoots for springles to fasten down thatch. (In Surry, Kent, and other southern counties, where numerous flocks of sheep are kept, the Hazel alone supplies the farmer with folding hurdles. E.) The roots are preferred where beautiful wood is required for inlaying or staining. It is a practice in Italy to put the chips of Hazel into turbid wine, to clear it, which it does in twenty four hours; and in countries where yeast is scarce, the twigs of Hazel, twisted together, so as to be full of chinks, and steeped in ale during its fermentation, then hung up to dry, may be put instead of yeast.—Painters and engravers prepare coals for delineating their designs thus; they take pieces of Hazel about the thickness of a man's arm, and four or five inches long, dry, and then cleave them into pieces about as thick as a finger. These they put into a large pot full of sand, and then cover the top of the pot with clay. This is exposed in a potter's oven, or any other sufficient degree of heat, and, when cooled again, the sticks are found converted into charcoal, which sketches freely, and easily rubs out. (The kernels of the fruit have a mild, farinaceous, oily taste, agreeable to most palates, though in large quantities they appear to be difficult of digestion, and have sometimes produced alarming symptoms. The Nut-gathering, towards October, often proves a source of rural delight:

"Ye swains, now hasten to the Hazel bank.

* * * * *

Ye virgins come.

* * * The clustering nuts for you
The lover finds amid the secret shade;
And where they burnish on the topmost bough,
With active vigour crushes down the tree;
Or shakes them ripe, from the resigning husk,
A glossy shower."

In the Northern portion of our Island, where the Walnut tree rarely ripens its fruit, the crops of Hazel-nuts are neither ample nor certain. The Filbert, (*C. maxima*, *fructu oblongo*, considered by Miller a distinct species), is an improved variety of this plant, and better managed in Kent than elsewhere, which Mr. Salisbury attributes to the trees being regularly pruned of superfluous wood. It is performed in the month of March, when the plants are in bloom, the only time when the fruit-bearing wood can be distinguished. According to Evelyn, the Hazel affects barren grounds, even among quarries in particular spots, as Haselbury in Wilts, Haselingsfield in Cambridgeshire, and Haslemere in Surry. Nor is this tree unconnected with superstitious practices, as for divinator rods, ("*virgula divinatoria*"), for the detecting and finding out of Minerals. "By whatsoever occult virtue," says Evelyn, "the forked stick discovers not only subterraneous treasure, but criminals guilty of murder, &c. made out so solemnly, by the attestations of magistrates, and divers other learned and credible persons, who have critically examined matters of fact, is certainly next to a miracle, and requires a strong faith." To which we would apply the Hudibrastic distich,

"Thus he receives the most delight,
Who least perceives the juggler's slight."

And refer our readers to an ingenious essay in the Quarterly Review, No. 44: In the Highlands of Scotland the tree is considered of ill omen, but the finding of two nuts naturally conjoined highly felicitous. As an amulet; the *Cno Chomhlachais*, even in the nineteenth century, worn about the person with much confidence. And Gay, with a somewhat similar allusion, thus describes an incantation of the shepherds, not wholly obsolete even in our time;

TRIGYNIA.

POLYGONUM.* *Cal.* none: *Bloss.* resembling a cup with five divisions: *Seed* one, angular, generally naked.

"Two *Hazel-nuts* I threw into the flame,
And to each nut I gave a sweetheart's name,
This with the loudest bounce me sore amazed,
That in a flame of brightest colour blazed.
As blazed the nut, so may thy passion grow;
For twas thy nut that did so brightly glow."

And among various prognostics, we find in *Kal. Rust.* 1687—

"Observe when first the *Nuts* begin to bloom,
And flourishing, bend the tender branch; if these
Prove fruitful, such shall be thy corn's encrease,
And in great heat huge harvests shall be found;
But if with swelling leaves the shades abound,
Then shalt thou thrash a chaffy stalk in vain."

An observation of high antiquity; for *Virgil* of the Walnut-tree says,

"Si superant fœtus, pariter frumenta sequentur."

The gallantry of the same great poet would exalt the homely *Hazel* to at least equal honour with the vine, the myrtle, or the bay: for

"Phyllis amat *Corylos*; illas dum Phyllis amabit,
Nec myrtus vincet *Corylos*, nec laurea Phœbi." *Ecl.* vii.

"The Cyprian queen delights in myrtle groves;
With *Hazel* Phyllis crowns her flowing hair;
And while she loves that common wreath to wear,
Nor bays, nor myrtle boughs with *Hazel* shall compare."

On this subject that accurate observer of nature, *Mr. White*, has the following interesting remarks: "The squirrel, (accumulating them in large hordes for winter provender), the field mouse, and the bird called the nut-hatch, (*Sitta Europæa*), live much on *Hazel* nuts, and yet they open them each in a different way. In these instances instinct is perfectly uniform and consistent. The first, after rasping off the small end, splits the shell in two with his long fore teeth, as a man does with his knife; the second nibbles a hole with his teeth, so regular as if drilled with a wimble, and yet so small that one would wonder how the kernel can be extracted through it; while the last picks an irregular ragged hole with its bill: but as this artist has no paws to hold the nut firm while he pierces it, like an adroit workman, he fixes it, as it were in a vice, in some cleft of a tree, when standing over it, he perforates the stubborn shell." *Cowley* presents us with a lively picture of the squirrel despoiting in his favourite haunt.

"Upon whose nutty top
A squirrel sits, and wants no other shade
Than what by his own spreading tail is made;
He culls the soundest, dextrously picks out
The kernels sweet, and throws the shells about." *E.*)

An expressed oil is obtained from them, for the use of painters.—Goats and horses eat the leaves; sheep and swine refuse them.—The Brindle Spider and December Moths? *Phalena Populi*, *Pavonia*, *Psi*, *Gonastigma*, *Attelabus Coryli*, *Curculio Nucum*, (living on the kernels; (also *Rhynchites Bacchus*, rare, *R. pubescens*, *Apion nigritaræ*, *Orchestes Avellana*, and according to Kirby, that very uncommon insect *Apion ruficornæ*, are found

(1) *Stem herbaceous ; flowers with five stamens.*

P. AMPHIBIUM. Style cloven : spike egg-shaped.

Var. 1. *Aquaticum*. Leaves floating, obtuse, very smooth ; stamens shorter than the blossom.

(*E. Bot.* 436. *E.*)—*Kniph.* 9 ; *P. Hydropiper*—*Ludw.* 168—*Pet.* 3. 12. 6—*Fl. Dan.* 282—*Dod.* 582. 1—*Park.* 1254. 1, *a.*—*H. Ox.* v. 29. row 2. 1—*Ger. Em.* 821. 2—*Park.* 1254. 2—*H. Ox.* v. 29. row 1. 2. *f.* 4—*Ger.* 675. 2.

Leaves of a pleasant green, oblong-spear-shaped, glossy, surrounded at the very edge with a reddish line ; the younger minutely serrated. *Flowers* red.

Var. 2. *Terrestre*. Leers. Stem upright ; leaves somewhat pointed, rough ; stamens about as long as the blossom.

Curt. 223—*Pet.* 3. 12. *a.*

Leaves darker green.

In cultivated ground, but very seldom flowering, except in spots where water has settled.

(These varieties seem to depend merely on local circumstances. *E.*)

(**AMPHIBIOUS PERISCARIA OR SNAKEWEED. NARROW-LEAVED POND-WEED.** (*Welsh: Canwraidd goch. E.*) Pools, lakes, marshes, and ditches. *P. July—Aug.**

(2) *Flowers with six stamens ; capsule of one cell.*

P. HYDROPIPER. Flowers with cloven pistils ; stipulæ somewhat fringed : leaves spear-shaped, (without spots. *E.*)

upon the tree. It is observed in *Journ. Nat.* that, as in the animal world, after disease or violence has extinguished life, the dispersion is accomplished principally by the agency of other animals, or animated creatures ; so, in the vegetable world, vegetating substances usually effect the decomposition : for though, in the larger kinds, the high and lofty ones of the forest, insects are often the primary agents, yet other minute substances are commonly found to accelerate or complete the dissolution. It is probable, that decayed vegetable matter is in most cases the source whence this race of plants arises. The primary decline is possibly occasioned by putrescence of the sap, or defective circulation, and this unhealthy state affording the suitable soil for the germination of the parasitic fungus ; for there must be an original though inert seed, till these circumstances vivify its principle. Thus do the insidious *Byssi*, (of which family, is the dry rot, *B. septica*), with their radicles, penetrate like the finest hairs into the substance, and destroy the cohesion of the fibres. Some of the genera of plants appear to have distinct agents assigned to them. Such is the *Sphæria Coryli*, (Lamarck), to be found through the winter upon old Hazel sticks, (remarkable for the regularity of its tubercles), which originating upon the inner bark, at length bursts its way through the outer bark, and there disperses its pulverulent seeds. *Vid. Journ. Nat. Pl. v. l. 3.*—However this may be, it is undoubtedly, as described by Mirbel, the office of vegetable life to transform dead matter into organised living bodies :—and such is the simple and beautiful circle of nature, ever changing, ever new, (to which probably might refer, in an enlarged sense, the “*το σωμα κυκλοῖ ἐστι*,” of the father of Physic, rather than, as some have imagined, to the great discovery reserved for our immortal Harvey) : and thus, as Dr. Mason Good has well expressed it, “every thing lives, flourishes, and decays ; every thing dies, but nothing is lost : for the great principle of life only changes its form, and the destruction of one generation is the vivification of the next.” *E.*)

* (Water fowls are said by Curtis to be fond of the seeds. Gréville designates the plant “a mischievous weed.” *E.*)

Curt.—(E. Bot. 989. E.)—Blackw. 119—Fuchs. 843—J. B. iii. 780—Pet. 3. 5—Matth. 583.

(Plant one to three feet high, erect; remarkable for its slender, long, drooping spikes, both lateral and terminal, of distant reddish flowers. E.) Leaves spear-shaped, waved, not spotted. Whole plant sprinkled with minute glandular dots, but even with the surface, and more obvious with a moderate than a higher magnifying lens, probably the seat of its very acrid quality. Flowers green, red towards the end. St. (Cal. four or five cleft, variegated with red, white, and green. Styles united nearly half way up. E.)

WATER PEPPER. BITING PERSICARIA OR SNAKEWEED. (Welsh: *Tinboeth*; *Llys y din*. E.) Watery places, on the sides of rivulets, lakes, and ditches. A. July—Sept.*

P. MINUS. Flowers with slightly cloven pistils: leaves strap-spear-shaped, flat: stem creeping at the base (spikes slender, nearly upright. E.)

Curt.—(E. Bot. 1043. E.)—Lob. Obs. 171. 2—Ger. Em. 446. 3—Park. 857. 4—H. Or. v. 29. row 3. 5. f. 1—Pet. 3. 6.

Stems several, nine-inches to a foot high. Leaves almost veinless, (and not undulated. E.) Style sometimes slightly cloven into three. Curt. Leaves not acrid. St. Spikes short; flowers few, reddish. Samuels two, sometimes three, (they, and not the styles, separated. E. Bot. Rev. Hugh Davies, in Anglesey, finds it almost invariably with five stamens; rarely with four; never with six. Nearly allied to *P. hydropiper*, but much smaller. E.)

CREeping SNAKEWEED. (SMALL CREEPING PERSICARIA. Welsh: *Cynmog llychan*; *Trigladly*. E.) *Persicaria angustifolia*, ex *singulis gemculis florens*. R. Syn. 115. *P. Persicaria* β and δ . Linn. Moist and watery meadows. Pothill Fields, Westminster. Curtis. Gravel pit on Malvern Chase with *P. Hydropiper*. Stokes (About Blackheath. E. Bot. Wet places at Elstow; and Goldington, Bedfordshire. Abbot. Morden Cais, near Darlington. Mr. Winch. On Costesey Common, near Norwich. Smith. Filby Heath, Norfolk. Mr. D. Turner. Woodmansey, near Beverley. Teesdale. Banks of the Foss at York. Rev. Archdeacon Pierson, in Bot. Guide. By the border of Llyn Coron, and Llangeinwen mill-pool, Anglesey. Welsh Bot. Moist fields near Forfar. Mr. G. Don. Hook. Scot. *E.) A. Sept.

P. PERSICARIA. Styles two, united half way up: spikes egg-oblong, erect: leaves spear-shaped: stipulæ fringed.

Kniph. 4—Fl. Dan. 702—Walc.—Curt.—(K. Bot. 756. E.)—Pet. 3. 7—Blackw. 118—Dod. 608. 2—Lob. Obs. 171. 1—Ger. Em. 445. 1—Park. 857. 1—Ger. 361. 1—Trag. 90.

(Stem one to two feet high or more, erect, alternately branched, swelling above each joint. Leaves marked with a large dark spot. Spikes green-

* The whole plant has an acrid, burning taste. It cures little apthous ulcers in the mouth. It dyes wool yellow. The ashes of this plant, mixed with soft-soap, is a nostrum in a few hands, for dissolving the stone in the bladder: but it may be reasonably questioned whether it has any advantage over other semi-caustic preparations of vegetable alkali. Its acrimony rises in distillation, and the distilled water drank to the amount of two or three half pints daily, has been found very effectual in some nephritic cases. Horses, cows, goats, sheep, and swine refuse it.

ish or reddish. E.) *Pistils* half cloven. *Fruit-stalks* smooth. *Spikes* egg-oblong, upright. *Flowers* of a bright rose-colour. *Germen* oval and flattened, or three-square. *Style* often cloven half way down into three parts, and when this is the case, the germen and seed are three-square. *Seed* egg-shaped, and slightly convex on one side, or three-square. *Curt.* *Leaves* nearly smooth, but with very minute bristles lying along the edge. *Leaf-scales* sheathing, ribbed. *Common fruit-stalks* springing from the sheathing leaf-scales at the joints of the stem. *Flowers* three, or four together, included in a membranous fringed sheath, on short fruit-stalks of different lengths, which are again enclosed by membranous sheaths. *Blossom* segments concave, unequal. *Stamens* sometimes five and seven. *Anthers* occasionally two upon one filament. *Summits* globular.

(Varieties with *hoary leaves* have been described, but these we apprehend to be occasioned by a diseased state of the plant. E.)

DEAD OR SPOTTED PERSICARIA. SPOTTED SNAKEWEED. (Irish: *Glun-nagh Dearg*. Welsh: *Elinog goch*. E.) Ditches, on the side of water, and not unfrequently in corn-fields. A. July—Sept.*

P. (LAPATHIFOLIUM. E.) *Pistils* two: stipulæ not fringed: fruit-stalks rough with glands: seeds concave on each side. *Curt.*

Curt.—(E. Bot. 1382. E.)—*Lob. Ic.* 315. 1—*Pet.* 3. 11—*Fuchs.* 630—*Trag.* 91—*J. B.* iii. 779. 2—*Lonic.* i. 162. 1—*Dod.* 608—*Ger. Em.* 445. 2—*Park.* 857. 2—*H. Oz.* v. 29. row 2. 2.

(Whole plant paler, more robust and succulent, than the preceding; one to two feet high, but variable in luxuriance. *Flowers* often nearly white. E.) *Stem* cylindrical, smooth. *Leaves* egg-spear-shaped, smooth above; the uppermost dotted underneath with minute glands, the lowermost covered with a kind of down; sometimes with, and sometimes without spots. *Leaf-stalks* hairy underneath, with a slight roughness to the touch. *Leaf-scales* more strongly ribbed than in *P. Persicaria*. *Fruit-stalks* beset with minute yellowish globular glands, on exceedingly short foot-stalks. *Spikes* oval, when the seeds are ripe drooping. *Flowers* greenish, set close together. *Seed* flat, with a depression in the middle of each side, sometimes obtusely triangular. *Curt.*

PALE-FLOWERED SNAKEWEED. (PALE PERSICARIA. Welsh: *Costog y dom*; *Llys y dom*. E.) *P. lapathifolium*. *Linn.* Sm. *Relh.* Sibth. *Hook.* *Grev.* Willd., but not adopted here without regret, the trivial *pallidum* of our author being peculiarly characteristic. *P. Pensylvanicum*. *Curt.* *Huds.* Ed. 1. not of *Linn.* E.) Dunghills, corn-fields, and sometimes by the side of water. A. Aug.†

* Its taste is slightly acid and astringent. Woollen cloth dipped in a solution of alum obtains a yellow colour from this plant. Goats, sheep, and horses eat it. Cows and swine refuse it. *Linn.* (This, and some other species, are occasionally introduced into gardens, their flowers and general habit being far from inelegant. E.)

† Sparrows and other small birds are very fond of the seeds of all the varieties. *Curt.* (They are also acceptable to partridges. Called in the fens *Willow-weed*, where it is one of the worst weeds they have. It grows freely on all loose and deep soils, and on marshy lands, though it be scarcely known to the cultivators of clay, and is equally rare on turp-lands. The seeds very much infest the fen corn. They may be screened out, and are worth purchasing to feed and entice wild fowl at decoys. Figs will thrive on them boiled. In the fens this seed is often so predominant as to usurp the crop. Mr. Holdich advises, for its extirpation, after successive crops of oats, wheat, and grass, to "roll well, and weed well; and if you have not then completely destroyed this nuisance, you have done the next best thing—hindered it from growing." E.)

Var. 2. Stem and flowers red, but not so beautifully bright as those of *P. Persicaria*. Like the preceding in every other respect. Curt.

On dunghills with Var. 1, and also in corn-fields.

Var. 3. Stem spotted with red. Curt.

Curt. *P. Pers. caule maculato*.

Comes near to a distinct species. Stem spotted with red. Spikes much slenderer, even more so than those of *P. Persicaria*, red, but not so bright as those of *Persicaria*. Leaf-stalks rough underneath. Leaves generally white underneath. If not attentively examined, will be taken for *P. Persicaria*. Curt.

P. Persicaria, Pol. Leers. η . δ . Huds. Ditches about St. George's Fields, often with *P. Persicaria*, and on the watery parts of Blackheath and Peckham Rye. Dunghills, and in a ditch on Stourbridge Common. Worcestershire. Stokes. A. Sept.

Var. 4. Leaves hoary underneath. Ray.

Pet. 3. 8.

Willow-leaved Persicaria. Corn-fields, and other situations where the soil is not very rich.

(3) *Flowers with eight stamens and three pistils: spike single: stem undivided.*

P BISTOR'TA. Leaves egg-shaped, wavy, extended at the base along the leaf-stalks.

(*E. Bot.* 509. E.)—*Ludw.* 31—*Kniph.* 1—*Curt.*—*Blackw.* 254—*Mill.* 66—*Fl. Dan.* 421—*Woodv.* 34—*Sheldr.* 111—*Clus.* ii. 69. 1—*Dod.* 333—*Lob. Obs.* 156. 3—*Ger. Em.* 399. 1—*H. Or.* v. 28. row 3. 2—*Matth.* 946—*Park.* 392. 1—*Fuchs.* 773—*Trug.* 321—*J. B.* iii. 539. 1—*Lonic.* i. 202. 3—*Fuchs.* 774—*J. B.* iii. 538—*Ger.* 322. 1 and 3.

(*Stem* one to two feet high. *Spike* cylindrical, dense, one to two inches long. *Root* large, tortuous; whence the trivial name. E.) *Root-leaves* extended down the leaf-stalks. *Stem-leaves* sheathing the stem. *Flowers* in a spike, forming a single cluster. *Common calyx* of two valves, the one large, lopped, the other smaller and terminated by a membranous projection. *Flowers*, two within each common calyx, one of them on a fruit-stalk, the other sessile, surrounded with a proper kind of cup. thin, scarious, nearly cylindrical; *mouth* even, and very entire. *Blossom* with five divisions, pale red. *Anthems* double, the two parts being only united by the filaments.

GREAT BISTORT OF SNAKEWEED. (Irish: *Stansi*. Welsh: *Llys y ncidr*. E.) Moist meadows in the northern counties. Bishop's Wood, near Hampstead; and Battersea. Brome, Norfolk, (and Shipmeadow, Suffolk. Mr. Woodward. E.) Ham Green, near Matham and Martley, Worcestershire. Mr. Ballard. Near Derby. Mr. Whately. Near the Infirmary, Stafford. (River side, Broomfield, Essex. Mr. W. Christy. Near Llanfaes church, and on Treffos demesne, Anglesey. Welsh Bot. Near Bromsgrove on the side of the Kidderminster road. Purton. Roslin woods. Mr. Arnott. Greiv. Edin. In the Garlic Meadows, near Penn's Mill, Erdington, Warwickshire. E.) P. May—June.*

* The root is one of the strongest vegetable astringents. The young shoots are eaten in herb pudding in the north of England, Stokes; and about Manchester they are substituted
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P. VIVIPARUM. Leaves spear-shaped, (revolute, with prominent marginal veins: spike terminal, linear. E.)

(Hook. *Fl. Lond.* 81—*E. Bot.* 669. E.)—*Fl. Dan.* 13—*Kniph.* 2—*Clus.* ii. 69. 2—*Ger. Em.* 399. 2—*Park.* 392. 4—*Ger.* 322. 2—*J. B.* iii. 539. 2—*Pluk.* 151. 2.

(Much resembling the preceding species, but considerably smaller. E.) *Lower flowers* of the spike frequently changed into vegetating bulbs, Linn. (and thus does nature, by these numerous little gemmæ or buds, provide an ample remedy for the general imperfection of the flowers. Hook. E.) *Stem-leaves* strap-shaped, arising from a sheath. *Sheaths* inclosing the stem, terminated by a blunt membrane. Woodw. *Bulbs* darkish purple, egg-shaped, sometimes intermixed with the flowers, mealy and white within. St. (*Blossom* white or pinkish. E.)

SMALL OF VIVIPAROUS SNAKEWEED. (WELSH BISTORT. ALPINE BISTORT. E.) Mountainous pastures. Crosby Ravensworth, and other places in Westmoreland; near Settle, Yorkshire. Edge of Semer Water at Carr End, Wensleydale. Curtis. In the fields between Shap and Hardingdal, Westmoreland. Mr. Gough. (Near the top of Ben Lomond. Fl. Brit. On the banks of the Wear at Burtree Ford, Weardale. Mr. Winch. Northern declivity of Benbulbin mountain, Sligo. E. Murphy, Esq. E.) P. June—July.*

Var. 2. Huds. Root-leaves roundish and minutely serrated. Stem about four inches high. Ray.

H. Ox. v. 28. 3 and 5—*Park.* 392. 6.

Pastures on a high rock called y Grib Goch, above the lake Ffynnon Frech near Llanberis.

(4) *Flowers with eight stamens and three pistils: spike single: stem branched.*

P. AVICULA'RE. Flowers axillary: leaves spear-shaped, (rough-edged: ribs of the stipulæ distant: stem procumbent, herbaceous. E.)

Var. 1. *latifolium.* Retz. Broad-leaved.

Curt. i. 10—(*E. Bot.* 1252. E.)—*Fuchs.* 614—*J. B.* iii. 375. 1—*Trag.* 391—*Blackw.* 315—*Fl. Den.* 803—*Matth.* 651—*Dod.* 113. 1—*Lob. Obs.* 228. 3—*Ger. Em.* 565—*Park.* 443. 1—*H. Ox.* v. 29. row 3. 1—*Pet.* 10. 1—*Ger.* 451—*Lonic.* i. 168. 3—*Walc.* 5, *Cynvolulus.*

Stem scored, six to eighteen inches long, thickest at the joints, (whence the English trivial name; E.) and separating when pulled. *Leaves*, some egg and others spear-shaped. *Flowers* two or three together, axillary. *Fruit-stalks* short, but two of them longer. *Calyx* double, scarious; the outer with five spear-shaped segments inclosing the three florets; the inner incloses only the third floret, and sometimes the rudiment of a fourth. *Blossom* greenish on the outside, white within, often tinged with pink. (*Fruit* large, dark, shining, triquetrous. E.)

for greens, under the name of *Patience Dock*. Caley. (M. Hermstaedt, of Berlin, has discovered that this plant will tan leather effectually, and with a much smaller quantity than is necessary of Oak bark. E.)

* Plants cultivated for four years in a garden constantly produced perfect seeds in July, and flowered as constantly a second time in September. These latter germs vegetated on the stem. Mr. Gough.

BIRDS' KNOT-GRASS, or RED ROBIN. (Irish: *Glanneagh beug*. Welsh: *Canclwm*; *Berwr yr idr*. E.) Road sides, paths, streets, corn-fields, especially in a gravelly soil. A. April—Sept.*

Var. 2. *brevifolium*. Retz. Leaves oblong: stamens seven.

Ger. 451. 2—Pet. 10. 3.

Leaves about one-fourth of an inch long.

In gravelly spots, and road sides. Sandy road near Ingestree Heath, Staffordshire. Stokes.

Var. 3. *angustifolium*. Retz. Leaves strap-shaped.

Pet. 10. 2.

Leaves very slender.

Camberwell, and amongst corn in Houndfield by Pondersend. Ray.

Var. 4. Huds. Leaves oval.

Pet. 10. 2.

Uncultivated places. Ray. Near Coleshill, Warwickshire. Stokes.

Var. 5. (A larger plant, with somewhat fleshy leaves, when growing near the sea. *P. maritimum*. Ray: excluding all the synonyms, which belong to *P. maritimum*, Linn. is a perennial shrubby species, distinguished also by the very numerous and crowded ribs of its *stipula*. Sm. E.)

No plant varies more than this species in the shape and size of the leaves, from strap-shaped to oval, and in breadth from a line to half an inch. Woodw.

(5) *Leaves somewhat heart-shaped.*

P. FAGOPY'RUM. Leaves heart-arrow-shaped: stem nearly upright, without prickles: angles of the seeds equal.

(E. Bot. 1044. E.)—Dod. 512—Lob. Obs. 513. 3—Ger. Em. 89—Park. 1141—H. Oz. v. 29. row 1. 1. f. 1—Pet. 2. 12—Trag. 648—J. B. ii. 993—Ger. 82. 2—C. B. th. 530—Lonic. i. 253. 1 and 2.

(Herb rather succulent. Stem a little flexuose, smooth, except a downy line along one side, about one foot high. Flowers in spreading panicles, terminal and lateral. Sm. Hook. E.) Five of the eight stamens bear anthers whose lobes are separated by a short bar. All the filaments have yellow glands between them. The three styles are divided to the very base. E. Bot. E.) Blossom purplish white. Flowering spikes shorter than the leaves.

BUCK WHEAT. BRANK. FRENCH WHEAT. (Welsh: *Gwenith yr hyda*. E.) Corn-fields: (scarcely indigenous. E.) A. July—Aug.†

* The seeds are useful for every purpose in which those of the next species are employed. Cows, goats, sheep, horses, and swine eat it. The stubbles in Sweden are purpled over with this plant. Linn. It affords nourishment to *Chrysomela Polygoni*; (also the seeds to many small birds, whence its trivial name. In Alsace it is gathered, and dried in large quantities as hay for cattle. De Cand. In England it is considered a sort of *Surface Squitch*, troublesome to the farmer, but generally so from neglect of manuring, drill husbandry, and the hoe. E.)

† The plant is very impatient of cold, perishing on the first attack of frost. The seeds furnish a nutritious meal, which is not apt to turn acid upon the stomach. It is made into thin cakes in Shropshire and other parts of England, called crumpits: (and, according to Kämpfer, a somewhat similar repast is offered to travellers at all the inns in Japan. E.) It is usual with farmers to sow a crop of Buckwheat, and to plow it under when fully grown,

P. CONVOLVULUS. Leaves heart-arrow-shaped: stem twining, angular: segments of the calyx obtusely keeled. E.)

Curt. 253—(*E. Bot.* 941. E.)—*Fl. Dan.* 744—*Ger.* 713. 4.

(Stem twining from left to right, to the height of several feet, sometimes roughish, branched. *Stam.* occasionally but six. *Styles* sometimes only two. Sm. E.) Leaves arrow-shaped, (alternate, stalked, E.) the angles at the base sometimes lopped. Flowering spikes longer than the leaves. Blossom greenish white, (in terminal interrupted spikes, each on a little stalk. E.) Anthers red.

BLACK BINDWEED. CLIMBING SNAKEWEED OR BUCK-WHEAT. (BEAR-BIND. E.) (Welsh: *Yttag*; *Taglys yr yd.* E.) Corn-fields, gardens, and hedges. A. June—Sept.*

TETRAGYNIA.

PARIS.† Calyx four-leaved: Petals four, narrower: Berry four-celled: (Seeds numerous. E.)

P. QUADRIFOLIA. (Leaves four, ovate, at the top of a simple stem: flower solitary. E.)

Kniph. 12—*Fl. Dan.* 139—*E. Bot.* 7—*Blackw.* 286—*Mutth.* 1093—*Dod.* 444—*Lob. Obs.* 137. 2—*Ger. Em.* 405. 1—*Ger.* 328. 1—*Pet.* 44. 8—*Fuchs.* 87—*J. B.* iii. 613—*Park.* 390. 1—*H. Ox.* xiii. 3. 6.

Root somewhat fleshy. Stem naked, eight to twelve inches high. Leaves shining, from one to seven; plants with one, two, three, and four leaves barren; with from three to seven bearing a flower. Calyx sometimes with only three leaves. Caley. Leaves mostly four, large, tapering to a point, (verticillate on the top of the stalk, above which arises a solitary, angular, peduncle. E.) Styles purplish black, hardly so long as the berry. Blossoms pale green.

(For a representation of this plant with five leaves, and the flower following the quinary division, presenting five calyx-leaves and petals, ten stamens, five styles, and a five-celled capsule, vid: *Obs. on the Plants of South Kent*, by Mr. Gerard Edwards Smith. Pl. 1. E.)

as a manure to the land. The seeds are excellent food for poultry, (especially for pheasants, nothing encouraging them to remain in a particular spot more than a small stack of Buckwheat. E.) Sheep that eat this plant become unhealthy. As it flowers late in the summer, M. Du Hamel, in his observations upon the management of bees, advises to move the hives in the autumn to a situation where plenty of Buckwheat is sown. (Another writer on this subject says, that he has known the bees of a very large apiary fill the combs with honey in a fortnight in consequence of being placed near a large field of Buckwheat. E.) Cows, goats, and sheep eat it; swine and horses refuse it. (A writer in *Gent. Mag.* v. 56. insists that swine not only eat but prefer Buckwheat, and relates a curious instance of violent thirst and intoxication being occasioned thereby. E.)

* The seeds are quite as good for use as the preceding species, are produced in greater quantity, and the plant bears cold better. Cows and goats eat it: sheep, swine, and horses refuse it. Linn. A horse eat it. St. *Phalena Lubricipeda* is found upon several of the species. (This is considered by the agriculturist as one of the weeds which infest samples of corn. In wheat the seeds are very objectionable; in oats not so much so, horses being fond of them. In its growing state it is particularly injurious by getting above hail and effectually preventing its rising. E.)

† (Of obscure etymology: according to Ambrosinus, *‘a paritate foliorum.’* E.)

HERB PARIS. ONE-BERRY. FOUR-LEAVED TRUE-LOVE. (Welsh: *Cwlwm cariad.* E.) Woods and shady places. Woods on the sides of Bredon Hill, Worcestershire. Nash. Ripton Wood, Huntingdonshire. In Norfolk, rare. Mr. Woodward. Love Lane, near Derby. Mr. Whately. Wood of Methven, Perthshire. Mr. Millar. Near Gainford, and in Raby Park. Mr. Robson. (Near Ashby Lodge, on Lansdown. Rev. J. H. Ellicombe. In Stockwood, Keynsham; and in a small copse by the side of the Wells road eight miles from Bristol. Mr. Fred. Russell. In the Church-litten-copple, Selborne. White's Nat. Hist. Ken-wood, Hampstead, Middlesex. Mr. Hunter. About Frankley, Worcestershire. In plantations near Bostock House, Cheshire. Dr. Bostock. Woods at Hawnes; and Renhold; Clapham Park Wood; Bedfordshire. Abbot. Bank Wood; Naworth Woods; and road sides between Hutton Moor and Penrith. Hutchinson. Among the thickets on the north of Garregwen rocks, Denbighshire, and on the opposite side the rivulet. Mr. Griffith. There is reason to suppose it has been found in Anglesey, though not recently. Welsh Bot. Thickets near Oxton toll-bar; Pleasley Wood, near Beauvale Abbey and Newton Wood, Notts. In the woods at Turnworth, Ashcomb, and near Blandford. Pulteney. Stream side in the lodge thicket, near Painswick. Mr. O. Roberts. In Castle Eden Dean, Durham. Winch. Guide. Wood about a mile south of Newbattle, near Dalkeith. Dr. Parsons. Grev. Edin. In thickets near Lyminge, Kent. Rev. Ralph Price, in Sm. Obs. E.) P. May—June.*

ADOXA.† *Cal.* cloven, beneath: *Bloss.* four or five-cleft, superior: *Berry* four-celled, invested with the calyx: (*Seeds* four, bordered. E.)

A. MOSCHATEL'INA.

Dicks. H. S.—(*E. Bot.* 453. E)—*Fl. Dan.* 94—*Curt.* 137—*Kniph.* 8.—*J. B.* iii. 206—*H. Or.* iv. 28. 14—*Walc.*—*Ger.* 933. 10—*Park.* 62. 1—*Lob. Adv.* 300. 1. and *Ic.* i. 674. 2—*Ger.* 1091. 10—*Park.* 326. 6.

Root-leaves triply three-fold; *leaflets* three-lobed. The *calyx* in the uppermost flower has only two lobes, the blossom four-cleft, the stamens eight, and the pistils four; but the lateral flowers have a three-cleft calyx, a five-cleft blossom, ten stamens, and five styles. *Berry* green, reddish when quite ripe. (*Root* scaly. *Stem* six inches high, weak, slender, four-square, simple. *Flowers* five, forming a compact, four-sided, pedunculate head, one always terminal, green, small, emitting a musky odour when moist with dew. E.)

TUBEROUS MOSCHATEL. (Welsh: *Anfri*; *Mwsglys.* E.) Damp woods and shady places, not uncommon.‡ P. April—May.

ELATINE.§ *Cal.* four-leaved: *Petals* four: *Caps.* four-celled, four-valved, flattened: (partitions from the column: *Seeds* oblong. Sm. E.)

* The leaves and berries are said to partake of the properties of opium. The juice of the berries has been used as an opthalmic. Linnæus says that the roots will vomit as well as ipecacuanha, given in a double quantity.

† (From a privative, and δοξω, glory; void of show; unostentatious; characteristic of its unobtrusive mien. E.)

‡ ("Adoxa loves she greenwood shade;
There, waving through the verdant glade,
Her scented seeds she strews.")

§ (From ἐλατήν, ἐλάσσων, the less; so called because it is the smaller species. Dioscor. E.)

(*E. HYDROPIPER*. Leaves opposite, in pairs: stem striking root, very much branched.

E. Bot. 955.

Has the general appearance of *Montia fontana*. Root fibrous, white. Plant very smooth, often growing under water. Stems, very much branched, spreading, striking root, leafy, about two inches long. Leaves opposite, battledore-shaped, very entire, scarcely one quarter of an inch long. Blossoms axillary, solitary, on fruit-stalks, white, or rose-coloured, generally closed, and, with us, three-cleft, having six stamens, three pistils; though sometimes, on the same plant, four-cloven, with eight stamens, and four pistils. Seeds numerous, small, oblong, curved, angular, prettily striated across. Fl. Brit.

SMALL WATERWORT. (*E. Hydropiper*. *E. Bot.* Fl. Brit. Willd. β . but, according to Smith, not of Linn. which is described as a larger plant, generally growing entirely under water, and not yet observed in England. *E. tripetala*. Eng. Fl. E.) On the sandy shores of lakes and ponds. Discovered by the Rev. Mr. Williams, about the eastern shore of Bomere Pool, near Condovery, Shropshire. (Near Binfield, Berks. Mr. T. F. Forster. E.) A. Aug. E.)

QUERCUS.* B. and F. Flowers on the same plant: Bloss. none.

B. Calyx bell-shaped, five-cleft: Stamens five to ten.

F. Cal. bell-shaped, very entire, rough: Style one: Nut egg-shaped, coriaceous, of one seed, and, when ripe, of one cell.

(*Q. ROBUR*. Leaves deciduous, oblong, wider towards the extremity: their sinuses rather acute: lobes obtuse: fruit-stalks elongated.

E. Bot. 1342—Hunt. Evcl. 69—Woodv. 126—Fl. Dan. 1180.

A noble tree with widely extended, nearly horizontal, and somewhat flexuose, or zigzag arms. Leaves alternata, sub-sessile, smooth, shining above, paler, and slightly glaucous beneath, with a single mid-rib, and veins passing into the lobes. Flowers in axillary catkins; the barren ones pendant, yellow, many-flowered, deciduous, two inches long. The fertile ones lateral, small, brownish green, about three on each peduncle; the outer calyx enlarged and indurated, becoming the permanent receptacle or cup of the smooth, finally deciduous nut or acorn.

COMMON BRITISH OAK. Irish: *Crann Dara*. Welsh: *Derwen goesog*. Gaelic: *An Darach*. *Q. robur*. Linn. Hud. a. Relh. Sibth. Woodv. Sm. Hook. Grev. Purt. *Q. femina*. With. Oed. *Q. pedunculata*. Willd. Ait. Ehrh. Very general in woods and hedges, especially in the northern half of our island; in sheltered situations attaining a vast size; on mountainous and exposed spots dwarfish. (In proof of the aboriginal nature of the Oak, Mr. Winch adduces the fact, that enormous trunks and branches of these trees are dug out of the peat mosses in the vales of Tyne, Derwent, and Tees; and that this phenomenon occurs even among the recesses of the Cheviot mountains, a district which is now destitute of Oaks. E.) T. April. E.)

* (The etymology of this name has been satisfactorily deduced by Le Pelletier and De Thois, from the Celtic *quercus*, fine or noble, and *cuez*, a tree. This pre-eminent tree was also called in the Celtic tongue *Derw*, whence Druid or Priest of the Oak. E.)

(*Q. sessiliflora*. Leaves on elongated stalks, deciduous, oblong, with acute sinuses nearly opposite: fruit sessile.

E. Bot. 1845.

The *receptacles* of the fruit being perfectly sessile readily distinguishes this species; which it is essential to do, the timber being of inferior quality. Leaves more regularly and equally pinnatifid. Tree nearly, if not altogether, as large as the preceding.

Var. 2. Leaves downy underneath, and more inclined to remain evergreen.

Durmast Oak. Mart. Rust. t. 12. In the New Forest, Hampshire. Martyn. Sussex. Mr. Borrer.

SESSILE-FRUITED OAK. BAY OAK, about Newberry. Welsh: *Derwen ddigoesog*. *Q. sessiliflora*. Salisb. Sm. Hook. Grev. Purt. *Q. sessilis*. Ehrh. *Q. robur*. With. Hull. Abbot. Willd. Huds. β . Not so general as the former species, though not uncommon in woods, parks, &c. especially in the north of England. Bagley wood. Bobart, in Ray. In many parts of Norfolk; also about London. Smith. Very common about Himley and King's Swinford, Staffordshire; Corley woods, and Haywood, Warwickshire. Bree, in Purt. Roslin wood. Greville. Edge of Birnam wood, near Dunkeld. Hooker. The common Oak of Anglesey and the adjacent counties. Davies. Edgbaston Park, Warwickshire.

T. April—May. E.)*

* (What the Lion is to beasts, the Eagle to birds, and the great Leviathan to fishes, the Oak may be considered among trees,

"Lord of the woods, the long-surviving Oak!"

"Multa virum volvens durando secula vincit."

For of all the fifty thousand species of phenogamous plants described in the known world, "from the cedar-tree that is in Lebanon even unto the hyssop that springeth out of the wall;" none hath attained so great celebrity, from the most remote ages of antiquity to the present time;

"The monarch Oak, the patriarch of the trees,
Shoots rising up and spreads by slow degrees;
Three centuries he grows, and three he stays,
Supreme in state; and in three more decays." Dryden.

symbol of Taronwy or Pendaran, the God of Thunder of the latter; when the grove was the haunt of Gods,

"Habitarunt Dii quoque sylvas."

Or as described by Pliny, "Jam per se Roborum eligunt lucos; neque ulla sacra sine eâ fronde conficiunt." Thus, during the dark ages of Pagan superstition, a prophetic spirit was fabled to preside in the largest Oaks; the priest or druid delivering the oracle being concealed in the unbrageous foliage, or in the hollow trunk.

In truth there is an awful solemnity beneath the shadowy groups of old patrician trees, which irresistibly disposes the mind to serious meditation:

"It seems idolatry with some excuse
When our forefather Druids in their Oaks
Imagined sanctity" Cowper.

The Greeks also bestowed due honours on this tree, and of oaken wreaths was composed the Roman civic crown. Lucan thus refers to this usage;

RHODIOLA.* B. and F. flowers on different plants.

B. Bloss. four petals: Cal. with four divisions: Nect. four, notched.

"Straight Lelius from amidst the rest stood forth,
An old centurion of distinguished worth;
The *oaken* wreath his hardy temples wore,
Mark of a citizen preserved he bore."

And likewise various authorities prove that

"With boughs of *Oak* was graced the nuptial train."

Descending to remarkable facts in the history of later times, it is singular that, though the *Oak* may have been abused to superstition, Cromwellian reformers caused the acorn to be set on the top of the crown instead of the cross. Of happy presage (as the royalist partisans would infer), that the tree which bore such fruit should shelter the rightful sovereign from the fury of rebellion, till the cross resumed its place upon the crown.

"A grove appears which Boscobel they name,—

* * * * *
* * * * * henceforth no celebrated shade
Of all the British groves shall be more glorious made."

In commemoration of that event, and the restoration of Charles II, on the 29th of May, also that monarch's birth day, *Oak* boughs are still exhibited. But the adaptation of this noble tree to naval purposes has long intimately connected it with our national glory;

"The *Oak*, when living, monarch of the wood,
The English *Oak* which, dead, commands the flood."

And it is gratifying to learn that by the vigilant superintendence of commissioners, no less than 51,627 acres are now actually thus occupied in timber or young plantations. Nor can private individuals bestow a more patriotic boon on generations yet unborn, than by encouraging

"Those sapling *Oaks* which, at Britannia's call,
May heave their trunks mature into the main,
And float the bulwarks of her liberty." Mason.

Oak loves hilly better than boggy ground, and thrives best, while young, in large plantations. Its roots descend deep into the earth, and therefore will not bear to be transplanted. Much lopping destroys it. Grass will hardly grow beneath it. (Variegated kinds are propagated by grafting. — For classical description of the *Oak*, none exceeds that of Virgil.

"Veluti *minoso* validam cum robore *Quercum*
Alpini Boreæ, nunc hinc, nunc *fluvibus* illinc
Eruere inter se certant: it stridor, et alte
Consternunt terram concusso stipite frondes:
Ipsa hæret scopulis; et quantum vegetæ ad auras
Ætherias, tantum radice in Tartara tendit." *Æn.* iv. 441.

The accurate Gilpin, descending to the characteristic ramification, observes: "The *Oak* divides his boughs from the stem more horizontally than most other deciduous trees. The spray makes exactly in miniature the same appearance, (according to a simple principle obvious in other trees). It breaks out in right angles, or nearly so; forming its shoots commonly in short lines; the second year's shoot usually taking some direction contrary to that of the first. Thus the rudiments are laid of that abrupt mode of ramification, for which the *Oak* is so remarkable. When two shoots spring from the same knot, they are commonly of unequal length; and one with large strides generally takes the lead. Very often also three shoots, and sometimes four, spring from the same knot. Hence the spray

* (Diminutive of *ρῶον*, the rose; the roots of this plant smelling like a rose. E.)

F. Cal., Pet., Nect., the same: Pist. four: Caps. four, many-seeded.

R. RO'SEA.

of this tree becomes thick, close, and interwoven; so that, at a little distance, it has a full, rich appearance, and more of the picturesque roughness, than we observe in the spray of any other tree. The spray of the Oak generally springs from the upper, or the lateral parts of the bough: and it is this which gives its branches that horizontal appearance, which they generally assume." Vol. 1. p. 107. E.) The wood is hard and tough,

(———"the unwedgeable, and gnarled Oak." Shaks. E.)

tolerably flexible; not easily splintering; and therefore is preferred to all other timber for building ships of war. It is well adapted to almost every purpose of the carpenter; (the best wainscoting, and furniture in general, neither less fashionable nor less expensive than foreign wood; nor is the meed of high desert ever deemed more honourable than when presented in heart of Oak; E.) but an attempt to enumerate all the economical uses of this well known tree would be superfluous as difficult:—Oak saw dust (possesses the tanning principle in a serviceable degree. E.) It is the principal indigenous vegetable used in dyeing fustian. All the varieties of drabs, and different shades of brown, are made with Oak saw-dust, variously managed and compounded. (Copse Oak, after being barked, is much employed to produce the pyro-lignic acid, or oak-vinegar: for culinary purposes inferior, but for the chemical arts superior, and readily obtained six times as strong as distilled vinegar. E.) The balls or Oak apples are likewise used in dyeing, as a substitute for galls, and for making the best ink. The black obtained from them, by the addition of coppers, is more beautiful than that from galls, but not so durable. The bark is universally used to tan leather, (and maintains a secondary value for forming beds to produce artificial heat in pinneries. For this purpose Oak-leaves are asserted by Speechly to answer equally well as the tan, heating more moderately, and afterwards yielding a better manure. E.) Its astringent properties may be turned to good account in various medical indications. An infusion of it with a small quantity of coppers is sometimes used to dye woollen of a purplish blue; the colour, though not very bright, is durable. The balls or galls upon the leaves are occasioned by a small insect with four wings, called *Cynips Quercifolia*, which deposits an egg in the substance of the leaf by making a small perforation on the under surface. The ball presently begins to grow; and the egg in the centre of it changes to a worm; this worm is transformed to a nymph, and the nymph to the flying insect with four wings. Horses, cows, sheep, and goats eat the leaves; swine, turkeys, and deer fatten on the acorns, (and, by compulsion of hunger, human life has been so sustained. Roncel states that they may be used as coffee, and have the property of strengthening the nerves. The fresh fruit he recommends to be eaten like chestnuts; but as a substitute for the staff of life they are usually ground. Indeed the Romans considered the less austere fruit of their Italian species as affording a regular supply of food, not merely advantageous to their oxen, but suitable to man, prepared as chestnuts,

———"et quernâ, glande repasta
Equasse annosas vivendo corpora Quercus.

Such was generally the custom in the earlier ages of the world, (said to have been derived from Jupiter himself, before Ceres had instructed mankind to till the earth for the raising of corn,

"Prima Ceres ferro mortalis vertere terram
Instituit." Geog. i.

Whence the tree became dedicated to that deity; and the North American Indians of the present day continue to eat the acorns of *Q. Virginiana*, storing them up in winter; and are said also to extract a valuable oil from them. Mr. Gilpin, who possessed the art of rendering even the most ordinary and familiar subjects interesting, has given, in his Remarks on Forest Scenery, a detailed account of the management of the numerous herds of hogs which during the autumnal season are fed with mast; or in the more measured numbers of a rustic bard,

(*E. Bot.* 508. *E.*)—*Fl. Dan.* 183—*Blackw.* 586—*Matth.* 1024—*Clus.* i. 65.
1—*Dod.* 347. 2—*Lob. Obs.* 212. 3; *Ic.* i. 391. 1—*Ger. Em.* 532—*Park.*

"No more the fields with scatter'd grain supply
The restless wand'ring tenants of the sty;
From Oak to Oak they run with eager haste,
And wrangling share the first delicious taste
Of fallen *Acorns*; yet but thinly found
Till the strong gale have shook them to the ground.
It comes; and roaring woods obedient wave:
Their home well pleased the joint adventurers leave.
The trudging sow leads forth her numerous young,
Playful, and white, and clean, the briars among,
Till briars and thorns, increasing, fence them round,
Where last year's mouldering leaves bestrew the ground,
And o'er their heads, loud lash'd by furious squalls,
Bright from their cups the rattling treasure falls;
Hot, thirsty food; whence doubly sweet and cool
The welcome margin of some rush-grown pool.

Whole days and nights they tarry midst their store,
Nor quit the woods till Oaks can yield no more." Bloomfield.

About the month of October immense numbers of acorns are conveyed away and secreted in the earth by rooks for winter food; and hence arise many seedling plants: nor does the glory of Britain receive less support from the insignificant squirrel, whose industry buries many a winter store, often forgotten, or by accidental circumstances destined to furnish a supply for future navies. The acorn furnishes a familiar illustration of the whole vegetable design visibly existing in the seed. The *cotyledons*, or seed lobes, intended to afford nourishment to the young plant when it begins to expand in the earth, and from which the first leaves are derived; the *corculum*, or heart, placed between the cotyledons, which when it expands exhibits a *plumula*, or little feather, and afterwards becomes a tuft of young leaves; the *hilum*, or eye, an external scar on a seed where it is attached to the capsule; and the *arillus*, or seed-coat, which falls off spontaneously.

"The pulpy acorn, as it swells, contains
The Oak's vast branches in its milky veins,
Each ravell'd bud, fine film, and fibre line,
Trac'd with nice pencil on the small design;
Grain within grain successive harvests swell,
And boundless forests slumber in a shell."

For the dimensions of many extraordinary trees, we would refer to the works of Plot, Evelyn, and especially for graphic delineation to Strutt's *Sylva Britannica* and *Delicie Sylvarum*. We are happy to perceive, for the advantage of those who may not readily obtain access to Mr. Strutt's larger works, that a series of masterly delineations is likely to be continued by the same eminent artist in the *Mag. Nat. Hist.* wherein it is very justly observed, that, "were this study to enter into the education of the landscape painter, as much as that of general history enters into that of the historical painter, we should not so frequently have to regret, in the works of our first artists, not only violations of truth and nature in the kinds of trees, but in their situations in regard to soil, surface, water, and other trees or plants." p. 87. v. i. In one growing in 1764, in Broomfield wood, near Ludlow, the trunk measured sixty-eight feet in girth, and twenty-three in length, and which, allowing ninety square feet for the larger branches, contained fourteen hundred and fifty five feet of timber. Lightfoot. The girth of the Green Dale Oak, near Welbeck, at eleven feet from the ground, was thirty eight feet; and one growing at Cowthorpe, near Wetherby, measured forty eight feet in circumference at three feet from the ground, and seventy eight feet close to the ground. Hunt. Evel. with a figure of the former at ii. p. 200, and of the latter at p. 197. In the year 1757, an Oak in Earl Powis's park, near Ludlow, measured sixteen feet three inches at five feet

727—*H. Ox.* xii. 10. 8—*Pet.* 42. 2—*Kniph.* 2—*Ger.* 426—*Cam. Epit.* 769—*Fuchs.* 665—*Trag.* 913—*J. B.* iii. 683—*Lonic.* i. 62. 1.

from the ground, and its trunk rose full sixty feet quite straight and clear of branches. Bath Soc. i. Mr. Marsham. Some few other examples, which as still extant, may reward the research of the modern tourist, we shall here particularize. The Swilcar Oak (Strutt) in Needwood Forest, six hundred years old, is not yet in the last stage of decay. Beggars' Oak (do.) Blithfield park, Staffordshire, contains eight hundred and twenty seven cubic feet of timber, and in 1812 was valued at 200*l.* Fredville Oak, Kent (do.) is supposed to contain fourteen hundred feet of timber. Panshanger Oak (do.) contains one thousand feet of timber, and measures nineteen feet girth a yard from the ground, though scarcely yet in its prime. Salcey Forest Oak, Northamptonshire (do.), at one yard from the ground, measures in girth twenty four feet. Abbot's Oak, Woburn (do.), upon whose branches were executed, in 1537, Roger Hobbs, Abbot of Woburn, together with the Vicar of Puddington, by order of Henry VIII. for refusing to surrender their sacerdotal rights: on which J. W. Wiffen thus apostrophizes the venerable tree, truly a "vetustum monumentum," worthy of perpetual preservation to warn posterity of the danger of submitting to arbitrary power, even in a lawful monarch.

"Yes, old memorial of the mitred monk,
Thou livest to flourish in a brighter day,
And seem'st to smile, that pure and patriot vows
Are breath'd where Superstition reign'd."

Shelton Oak, near Shrewsbury (do.), called the "grette Oake" in 1543, and by tradition believed to have served the "irregular and wild Glendower" for a post of observation previous to the battle of Shrewsbury in 1403, now measures at one foot from the ground thirty-seven feet girth. Queen's Oak, Huntingfield, Suffolk (do.), from which the Virgin Queen is believed to have shot a buck with her own hand, whilst enjoying the chase with Lord Hunsdon, now measures at five feet from the ground, thirty four feet in girth. Though not the most gigantic, among the most interesting of its kind, and as such likely to be preserved for ages yet to come, is Sir Philip Sidney's Oak, at Penshurst, as Waller describes it,

———— "yonder tree, which stands the sacred mark
Of noble Sidney's birth."

An Oak called the King, growing in Wynnstay Park, North Wales, measures thirty feet in circumference, several feet from the ground. Gog and Magog, in Yardley forest; the former measures twenty eight feet at three feet from the ground, and contains sixteen hundred and fifty eight feet of timber: the latter is of still more imposing dimensions, though not equal in solid bulk. The Shellard's Lane Oak, Gloucestershire, (Pl. 1 of said Journal), is less remarkable for its magnitude than for decided characters of antiquity, and for the vigour with which its hamadryad, though alone in the land, still inspires it. Till 1789 stood a most venerable Oak in the Water-walk of Magdalen College, Oxford, which is supposed to have existed at the period of the Norman conquest, it having been a notable tree when the college was founded in 1448. "But the most magnificent Oak ever known to have grown in England," observes the author of the Journal of a Naturalist, "was probably that dug out of Hatfield bog. It was one hundred and twenty feet in length, twelve in diameter at the base, ten in the middle, and six at the smaller end; so that the butt for sixty feet squared seven feet of timber. This extraordinary vegetable exceeded in magnitude even the famous larch brought to Rome in the reign of Tiberius, as recorded in Plin. Nat. Hist." Among the Sylva Caledonia, (anciently at least as full of timber as South Britain), may be named the Wallace Oak, which stands on the spot which gave birth to the "patriot hero," of Elderslie, near Paisley. Of most of these stately foresters it may be justly said:

———— "immota manet, multosque nepotes,
Multa virum, volgus durando sæcula vincit." Virg.

And toss their giant arms amid the skies,
While each assailing blast increase of strength supplies.

Indeed Pliny alluding to the vast age to which such trees attain, describes them in the Hercynian forest as coeval with the world, "Hercyniæ sylvæ roborum vestitas intacta ævis et convergentis mundi præse immortalis sortis miracula excedit." l. xvi. c. 2.

Nectaries five. *Stamens* six, eight, or twelve. *Fabric.* (It varies with blossoms five cloven. *Fl. Brit. E.*) *Stems* numerous, simple, four to ten

*"Gigantic Oak, thy hardy head sublime
Erewhile must perish in the wreck of time;—*

*Arm after arm shall leave the mouldering bust,
And thy firm fibres crumble into dust."*

Notwithstanding the robust character of the Oak, and its proverbial strength, it is materially affected by the different strata of earth through which its roots happen to penetrate; and on this principle only can we account for the striking diversity frequently apparent, both in the season and colour of the foliage. The most remarkable phenomenon of this nature (not exceeded even by the Glastonbury thorn), occurs in the Cadenham Oak, near Lyndhurst, in the New Forest. This tree has been distinguished more than two centuries for budding every year in the depth of winter, or as the foresters insist, invariably on old Christmas Day, and then only. Many leaves certainly appear about that period, more or less expanded, but the progress of germination is soon checked by inclement weather, and in summer the foliage resembles that of neighbouring trees. In the same forest, near to Rufus's monument, another tree is said to exist, also remarkable for premature vegetation. Camden alludes to the very tree against which the arrow of Tyrrel glanced as subject to this peculiarity. In the Journal above cited, it is remarked, that the Oak produces its fruit precariously, which is attributed to suspended circulation; as brought to notice from the custom of barking this tree in the spring. "At times our barkers go on rapidly; yet in a few hours a frost, or a sharp wind, will put an entire stop to their operations, in consequence of the cessation of the flow of sap, which is followed by the adhesion of the bark to the wood. Whenever this nutriment ceases to be supplied, the immature and tender germen must languish, and if the supply be long suspended, it must perish." The season for felling Oak trees is limited by the law of England to the spring, when the sap is flowing. This is done to facilitate the peeling off the bark; but is attended, in the opinion of some judicious persons, by serious detriment to the timber; which is said to be far less durable than when fallen in the winter; so that ships which have been constructed of spring-cut timber, have decayed in less than half the time that those built with trees cut in winter have done. For this reason the French remove the bark from the trees standing, after which process the trees remain till the next, or sometimes a second winter. Mr. White states, "Oaks may be barked while the leaf is budding, but as soon as they are expanded the bark will no longer part from the wood, because the sap that lubricates the bark and makes it part is evaporated through the leaves." In a rich soil and suitable climate the Oak nearly triples its value of timber in the course of about nine years. An Oak properly cleared and trained from the agorn, will in fifty three years increase to fifty feet round measure, and square to above seventy feet, and be fit for the King's dock yards. Experiments by the Rev. — Hill, made at East Peckham, in Kent. The Oak derives its chief nutriment from the *tap-root*, which descends at right angles to the horizon, much attention must therefore be paid to preserve the tap root from injury. Previously to planting acorns in the month of March, *loosen the earth by deep trenching: never transplant the saplings intended for timber; keep the plant carefully pruned till arrived at a proper height.* The plants must be kept very clean from weeds; in October they must be thinned. A loam or marl soil is best for Oaks. Rev. R. Yates. Trees increase in girth by bark, &c. long after the branches decay, and the vigour of the extremities declines: and in altitude, not merely by the leading shoot, but by the general propensity of all the lower parts to ascend. An account of some curious experiments on acorns may be seen in the Month. Mag. vol 27. p. 148, by Mr. J. Browell, who reports the growth of Oak plants from acorns suspended in water, and remarks, that although some few vegetables have been raised without the medium of earth, a tree has probably never been before so produced. Oak bark long exposed to the weather exhibits layers of a delicate texture resembling the lace bark of Jamaica. The rugged coat which characterizes this, the elm, and other forest trees, is formed, as Mr. Thomson states, by the constant renewal, and gradually accumulating layers, of the epidermis; the old cuticle cracking, but not peeling off, as the diameter of the stem, or branch, increases.

inches high, cylindrical, smooth, hollow, upright, leafy. *Leaves* numerous, growing without order, (or rather subimbricated; *E.*) egg-shaped,

The preceding remarks generally apply to either species of British Oak; but it should be distinctly understood that the timber produced by *Q. sessiliflora* is far less strong and valuable than that of *Q. robur*, and usually of quicker growth. The inferior kind is supposed by some authorities to have been introduced two or three centuries ago, from the Continent, where the Oaks are chiefly of that species, especially in the German forests, the timber of which is known to be very worthless. There is too much reason to apprehend that this bad sort has been propagated in the New Forest, and other parts of Hampshire; also in Norfolk, the northern counties, and about London. It should be remembered that the acorns of the more valuable sort grow singly, or seldom two on the same peduncle; those of the baser, in clusters of two or three, and sessile, or close to the stem of the branch.

Very numerous are the little animals, and minor vegetables, which depend more or less for subsistence on the Oak tree: for

* * * "chief the forest-boughs,
That dance unnumber'd to the playful breeze,
* * * the nameless nations feed
Of eranescent insects." Thomson.

Mr. Kirby justly observes (Linn. Tr. vol. v.), that insects, although diminutive and often despised as too insignificant to accomplish important ends, are very powerful instruments to promote, sometimes indeed by partial evil, the good of the whole, by rendering their aid in preserving a due harmony in the economy of nature. None have a more arduous task assigned them than those whose office it is to accelerate the decay of the giant inhabitants of the forest, till that which from its bulk and solidity appeared calculated to last as long as the earth that gave it birth, is reduced in no very long time to its original dust. And it may be further remarked that in proportion to the difficulty of the task enjoined, is the number and variety of the artificers employed, so that upon the larger kinds of trees will be found to afford the most interesting field for the Entomologist. The nests and cells of many *Vespæ* are made of a kind of paper formed of the filaments of wood: the *hornet* frequently perforates hollow trunks, to construct her paper metropolis in security, and occasionally destroys young Oaks by penetrating to their centre. *Tipula pectinicornis* inhabit putrescent wood, and *Oniscus Asellus* abounds under the bark. The larva of the gigantic *Lucanus Cervus*, (Stag Beetle), the largest of the British Coleoptera, feeds upon decaying Oak or Elm; in the latter also *Lucanus inermis*. Several species of *Ips*, (*Bostrichus* Fab.) as *I. fuscus*, and others, are nourished between the bark and the wood, causing what Linnaeus termed pinnated labyrinths, by which the bark is finally separated from the wood; and aiding their operations will be found various *Cuscutiones*. Once in three or four years cockchafer, (*Scarabæus melolontha*), abound, and sometimes strip bare woods of Oaks in a few weeks. They again are devoured in the grub state by rooks, and on the wing in summer evenings attract the goat-sucker, (*Caprimulgus*). Such is the vigour of the Oak that, after having been thus denuded of leaves, the foliage is generally renewed, though rarely so in other trees suffering in like manner. Mr. White remarks that the cockchafer grubs "not only devour the roots of grass, but of corn; and it ought to be generally understood that rooks, so far from meriting persecution from the farmer, deserve his protection, for it is to feed upon this grub more particularly that they follow the plough." "The caterpillars of *Phalena Quercus* and *P. viridata*, though a feeble race, from their infinite numbers are of wonderful effect, being able to destroy the foliage of whole forests and districts. On leaving their *aurelia*, and issuing forth in their moth state, they swarm and cover the trees, though often checked in some degree by the swifts, which may be observed hawking after them." From the ingenious observations of naturalists we may infer that nothing is produced for waste; but that every thing, each particle, animate or inanimate, is subject to fulfil a destined end. Mr. White assures us that "even the scattered raspings of sound timber, supply materials for the nests of wasps; while hornets construct theirs with what they gnaw from decayed wood: these ligneous particles being kneaded up with

egg-spear-shaped, and in the younger plants spear-shaped; upwards distantly serrated, towards the base very entire, *fleshy*, sea-green, sometimes tipped with purple. *Stamens* much longer than the blossom. *Styles* very short, pointing outwards, permanent. *Root* white, large, woody. *Blossoms* terminal, yellow. *Habit* that of *Sedum Telephium*.*

YELLOW ROSE-WORT. ROSE-ROOT. (Gaelic: *Lus-nan-laogh*. E.) Mountains of Westmoreland, Cumberland, Yorkshire, and Wales. (On the summits of the Highland mountains. Western coast of Ireland, and the shores of the Hebrides. E.) On a rock on the summit of Ingleborough,

a mixture of saliva from their bodies, and moulded into combs." From Barbut we learn that of *Cynips quercus folii* a single one is produced in each gall, (made by puncture and extravasation). Instead of the *Cynips*, a larger insect sometimes issues from the gall, an *Ichneumon*, a parasite, neither the original inmate nor constructor of the gall, but whose mother deposited her egg in the yet tender gall, which when hatched, brings forth a larva that devours the larva of the *Cynips*, and comes out when it has undergone its metamorphosis, and acquires its wings.—On opening these leaf-galls, which are properly the habitation only of one animal, it is common to find two, the stronger preying upon the body of the other, and sucking its juices as it does those of the leaf; often it is found employed in devouring its unoffending neighbour at once; this is probably the case when its time of eating is nearly over; and, in fine, when we find the gall inhabited only by one insect, we are never certain that this is the proper inhabitant, as it may be one of these destroyers who has eaten up the other, and supplied its place. The Oak *Puceron* buries itself in the clefts of the bark, and feeds securely beneath it. It is nearly as large as a house-fly, and when it inclines to such a part of the tree just before it, it draws up and contracts its trunk, till it brings it to a proper length and direction. The extremity of this trunk adheres so firmly to the wood, that when pulled away, it frequently detaches a small piece with it. Ants pursue these creatures, (attracted by their saccharine egesta), and are sure indicators of their proximity. *Cynips quercus gemma*, a green fly, deposits its eggs in the Oak buds, which produces one of the finest galls, leaved like an unexpanded rose-bud, sometimes an inch in diameter, and attached to the branch by a pedicel. *Silpha quadripunctata* frequents the roots in winter, and the foliage in summer. Few individual plants afford so diversified a treat to the Entomologist, as, among others connected with the Oak tree, will be found *Lycus minutus*, *Telephorus minimus*, *Tillus elongatus*, *Silpha quadrimaculata*, *Circulio argentatus*, *Clythra quadripunctata*, *Ledra aurata*, *Thecla Quercus*, *Biston prodromarius*, *Tortrix fimbriana*, and *Fagana*, *Noctua fuscata*, *spumosa*, *Ambria*, *geminata*, and *fumaria*, *Cassida nobilis*, *Notodonta tritropa*, *Camelina* and *perfuscus*, *Callimorpha Celsina* and *rosen*, *Balaninus tenuirostris*, *Chrysomela decem-punctata*, *Clythra quadripunctata*, *Spherosoma Quercus*, *Livia* (*Aphis*) *Quercus*, *L.* (*Coccus*) *Quercus*, *Liparis Monacha*, *Bombix Dodonæa*, and *Quercus*, *Apatura Iris*, *Tortrix viridana*, and *Xylosteana*, *Lithosia antiqua*, *Apoda Testudo*. *Phalaena* (noctua) *Chrysoceras*, spins its web among the leaves, within which it produces the pupa. *Cerambyces* penetrate into the solid timber in all directions; none more formidable than *C. coriarius*. For a curious account of the destruction of navy timber by *Cantharis navalis*, and an effectual remedy, vid. Linn. Tr. vol. v. 261. Several minute parasitic Fungi also infest the Oak: viz. *Sphaeria Quercina*, compound, convex, rust-coloured, orbicular: on the dead branches, Jan. *Phacidium coronatum*, scattered, at first resembling a plane black circular spot; at length bursting in the centre, the segments becoming erect and slightly revolute: disk pale greenish or yellowish. Grev. Scot. Crypt. 52. Sowerby 118. Batsch 152.—*Erineum griseum*, on the lower surface of the leaf, remarkably gregarious, at first like a purplish stain; then assuming a grey and velvety appearance; peridia excessively minute and numerous, club-shaped; Grev. Scot. Crypt. 141.—*Hysterium vagrum*, superficial, linear, oblong or roundish, obtuse, black; margins obtuse, at length open; valuable in form, rarely more than a line in length, sometimes considerably elevated. Grev. Scot. Crypt. 233. *Sphaeria punctiformis* also, on the leaves. *Aulea* twenty, different species of *Aphis* have each their peculiar tree; among others we find *Aphis Quercus* concealed under the bark. E.)

* (Dahl is said to have frequently found this plant with perfect flowers, and would refer it to the genus *Sedum*: with which it agrees in every thing but the number of its parts. E.)

to the north-west; and on a mountain called the Old Man, at Coniston Water Head. Mr. Woodward. High-street, Westmoreland, on the edge of a precipice called Blea Water Crag. Mr. Gough. Near Mr. Rigge's slate quarry, in Coniston. Mr. Jackson. (Rocks of Cwn Idwel, Iscolion-dûon, Carnarvonshire. Mr. Griffith. Abundant on the ridge of rocks, immediately above Llyn Fynnon Lâs, Carnarvonshire. Mr. Dawson Turner. Maze Beck Scar, near Appleby. Rev. J. Harriman. On Ben Lawers, and Lomond. Mr. Winch. (On Fast Castle, and on rocks near Berwick. Mag. Nat. Hist. E.) P. May—July.*

MYRIOPHYLLUM.† B. and F. flowers frequently on the same plant: *Cal.* one leaf, four-toothed: *Petals* four, with claws, soon falling off: *Styles* none: *Nuts* two to four, covered with a coat.

M. SPICATUM. Spikes interrupted, leafless.

E. Bot. 83—*Fl. Dan.* 681—*C. B. Pr.* 73. 1—*Park.* 1257. 7—*J. B.* iii. 783. 1—*Pet.* 6. 5.

Flowering spike rising above the water, (two to three inches long. E.) *Whorls* six or eight, the upper of barren flowers, somewhat crowded, the lower of fertile flowers, more distant. *Petals* oval, concave, purplish without, shedding. *Summits* expanding crosswise. Woodw. *Stems* simple, or branched; divided within into about sixteen hollow cells. *Leaves* winged, (finely pinnatifid, entirely under water; E.) four in a whorl. *Leaflets* awl-shaped. *Flowers* four in a whorl; the barren uppermost, and some of them containing the rudiments of four germens. (*Cal.* acute, finely fringed. E.)

Var. 2. Huds. Broadish entire leaves at the base of the whorls. Bobart, in H. Ox.

SPIKED WATER-MILFOIL; (the latter name obviously a corruption of the French, *Mille-feuilles*. E.) **FEATHER PONDWEED.** (Welsh: *Myrdd-dail tywysenaidd*. E.) Ditches, ponds, lakes, and still water.

P. May—July.

M. VERTICILLATUM. Flowers in leafy whorls, (all axillary. E.)

Fl. Dan. 1046—*E. Bot.* 218—*Chus.* ii. 252. 1—*Park.* 1256. 3—*J. B.* iii. 783. 2—*Pet.* 6. 8.

In muddy ditches, with little water, it has the following appearance. *Stem* six or eight inches high, unbranched. *Leaves* not more than an inch long; leaflets one and a half or two lines long. In ponds thus: *Stems* branching, two feet and more long. *Leaves* under water one inch and a half to two inches long; leaflets half an inch long; hair-like and slender. *Spike* six or seven inches high with twelve to sixteen or more whorls, the lower ones about half an inch distant, the upper nearer, with four or five winged leaves at each whorl, about half an inch, and leaflets about one line in length. *Flowers* in the bosom of the leaves, similar to those of *M. spicatum*; those of the upper whorls usually barren; the lower fertile; and sometimes the upper barren, the middle one perfect, and the lower fertile. Woodw. *Flowers* greenish. *Anthers* yellow.

* The root, (which furnishes an astringent medicine, E.) has the fragrance of a Rose, particularly when dried, but cultivated in a garden, it loses much of its sweetness. Goats and sheep eat this plant. Cows and swine refuse it.

† (From *μυρίος*, a myriad, and *φύλλον*, a leaf; in reference to its numerous leaves. E.)

WHORLED MILFOIL. (Welsh : *Myrdd-dduil troellog*. E.) Ditches and stagnant waters, rare. Ditches near Bungay, and Yarmouth. The large sort in a pond at Hedenham, Norfolk, on a strong clayey soil. Mr. Woodward. (Near Wareham ; in ditches communicating with the Avon, near Sopley, Hants. Pulteney. Both species at Bootle and Little Crosby, near Liverpool. Dr. Bostock and Mr. Shepherd. (Old clay-pits, Broomfield, Essex. Mr. W. Christy. In a ditch between Gweunfyn-ydd and Cors llechylched, Anglesey. Rev. Hugh Davies. E.) P. June—July.

CLASS IX.

ENNEANDRIA.

DIGYNIA.

MERCURIA'LIS. Flowers barren and fertile on distinct plants : *Cal.* with three divisions : *Bloss.* none.

B. *Stam.* nine to twelve : *Anthers* globular : double.

F. *Caps.* two, united : each with one cell and one seed.

[*Quercus.*]

HEXAGYNIA.

BUTOMUS. *Involucr.* simple of three leaves : *Bloss.* six petals : *Caps.* six : *Seeds* numerous.

HYDROCHARIS. Flowers barren and fertile on distinct plants : *Cal.* three-cleft : *Bloss.* three petals.

B. *Sheath* two-leaved : *Filaments*, the three inner ones bearing a kind of style, or beak.

F. *Caps.* six-celled ; many-seeded ; beneath.

DIGYNIA.

MERCURIA'LIS.* Barren and fertile flowers on different plants : *Bloss.* none : *Calyx* with three divisions.

B. *Stamens* from nine to twelve : *Anthers* globular, double.

F. *Caps.* double, two-celled, one seed in each.

M. PEREN'NIS. Stem undivided : leaves rough : (root creeping. E).

Curt.—(*E. Bot.* 1872. E.)—*Walc.*—*Kniph.* 1. *B. plant.*—*Pl. Dan.* 400—*Mill.*

* (From the heathen deity, MERCURY; said by Pliny to have been the discoverer of this plant, or, rather, perhaps, of its powerful qualities; though possibly the name may merely refer to the colour which the herb yields, in heraldry so called. E.)

Ill.—*Cam. Epit.* 999. *B.* ; 998. *F.*—*Fuchs.* 444—*J. B.* ii. 979. 1—*Trag.* 191—*Lonic.* i. 136. 3—*Pet.* 1. 6—*Dod.* 659. 1—*Lob. Obs.* 132. 1. and *Ic.* i. 260. 1—*Ger. Em.* 333. 1—*Park.* 296. 2—*Pet.* 1. 5—*J. B.* ii. 979. 2—*H. Ox.* v. 34. 3. 4—*Matth.* 1299.

(*Root* creeping. *Plant* about a foot high ; foliage chiefly on the upper part. *Leaves* egg-shaped, acute, serrated. *E.*) *Barren spikes* longer than the leaves. *Fertile spikes* shorter. *Woodw.* *Barren flowers* in spikes, from the bosom of the upper leaves. *Fertile flowers* on fruit-stalks, generally solitary. *Anthers* two upon each filament. *Flowers* yellowish green. (Smith observes that the minute petals or nectaries are peculiar to the fertile flowers. *E.*)

(*PERENNIAL MERCURY.* *DOG'S MERCURY.* *Welsh:* *Clais yr húdd ; Cwliom yr asgwrn.* *E.*) *Woods, hedge-banks.* Barren and fertile plants rarely intermixed, each sort usually growing in large patches, whence it is probable that this plant, which propagates itself so much by roots, seldom produces perfect seeds. *Woodward.** P. April—May.*

M. ANNUA. Stem branching ; leaves smooth ; flowers in spikes.

Barren plant.—*Curt.* 336. 2—*Cam. Epit.* 996—*Fuchs.* 475—*J. B.* ii. 977. 2. *E. Bot.* 559. *E.*)—*Trag.* 190—*Ger.* 262. 1—*Dod.* 658. 1—*Lob. Obs.* 131. 1. and *Ic.* i. 259. 1—*Ger. Em.* 332. 1—*Park.* 295—*Pet.* 1. 8—*H. Ox.* v. 34. row 1. 1—*Blackw.* 164. 4. &c.—*Lonic.* i. 136. 2—*Gurs.* 382—*Matth.* 1297.

Fertile plant.—*Curt.* 336. 1—*Fuchs.* 473—*J. B.* ii. 977. 3—*Trag.* 190—*Blackw.* 162. 2. and 3. 1—*Cam. Epit.* 997—*Dod.* 658. 2—*Lob. Obs.* 131. 2. and *Ic.* i. 259. 2—*Ger. Em.* 332. 2—*Pet.* 1. 7—*H. Ox.* v. 34—row 1. 2—*Ger.* 262. 2—*Gurs.* 382—*Matth.* 1298.

(*Plant* glabrous, fetid, dark green. *Root* fibrous. *Stem* a foot high, more or less branched. *Leaves* ovate, acute, serrate. *Flowers* green, in axillary racemes. *Fruit* minutely prickly. *Grev. E.*) *Barren spikes* much shorter than the fertile ones. *Robs.* Some barren plants bear a few fertile flowers. *Calyx* smooth in the barren, hairy in the fertile flowers. *Stamens* sometimes sixteen or more.

ANNUAL MERCURY. *FRENCH MERCURY.* *Welsh:* *Clais yr húdd blyned-dawl.* *E.*) *Waste places and daughills about towns and villages.* Near Norwich, and at Lowestoft. *Mr. Woodward.** Near Sunderland. *Mr. Robson.* (In a cornfield between the almshouse of Cefn-coch, Anglesey. *Welsh Bot.* Frequent about London. *E.*.) A. Aug.—Sept.†

* This species is noxious to sheep, and deleterious to man. Ray relates the case of a man, his wife, and three children, who experienced alarming effects from eating it fried with bacon. Sheep and goats eat it ; cows and horses refuse it. In drying, it turns blue. Linn. Steeped in water it affords a fine deep blue colour, but which unfortunately is destructible both by acids and alkalies. St. (In the Isle of Skye it is called *Lus-glen-bracadale*, and used medicinally. Though a plant of slender pretensions, as an early harbinger of spring its appearance is ever acceptable. *E.*)

† The whole plant is mucilaginous, and was formerly much employed as an emollient, but is now disregarded. (The French prepare an aperient syrup from the juice. *E.*) The small Old Gentlewoman Moth and *Phalena meticalusa* feed upon it. Linn. (*Megachile*

HEXAGYNIA.

BUTOMUS.* *Involucrum* simple of three leaves : *Petals* six : *Caps.* six ; many-seeded : *Seeds* fixed on both sides of the capsules.

B. UMBELLATUS.

Curt.—(*E. Bot.* 651. *E.*)—*Kniph.* 7—*Fl. Dan.* 604—*Walc.*—*Ger.* 27. 2—*Matth.* 1031—*Dod.* 601. 1—*Lob. Obs.* 44. 2—*Ger. Em.* 29. **2—*Park.* 1197. 1—*H. Ox.* xii. 5. row 3. f. 3—*J. B.* ii. 524.

(A singularly elegant plant. *Leaves* triquetrous, two to three feet long, acuminate, all radical, smooth, cellular, half immersed in water. *Root* tuberous, horizontal: *E.*) *Involucrum* of three brown spear-shaped leaves. *Fruit-stalks* forming a large umbel, long, thread-shaped, unequal, separated by brown membranous leaves. *Stamens* placed in a regular circle upon the receptacle. *Stem* cylindrical, naked. *Blossoms* purple and white, terminal ; sometimes quite white ; (each nearly an inch broad. *E.*)

FLOWERING RUSH. WATER GLADIOL. (Welsh : *Engraff* ; *Bruwynen flodeuog.* *E.*) Slow streams and muddy ditches. Skerne, near Darlington. Mr. Robson. Side of the river Avon, at Evesham. Mr. Ballard. Bungay. Mr. Woodward. (In ditches between Ince and the sea, north of Liverpool. Mr. Shepherd. Mere, near Scarborough. Mr. Travis. About White Cliff, and Durmeston, near Blandford. Pulteney. (In Cors ddygai, Anglesey. Welsh Bot. Duddington Loch. Mr. J. Mackay, in Grev. Edin. Bushy Park, Middlesex. Mr. Winch ; and frequently adorning the rivers Avon, Arrow, and Alne, in many places near Alcester. Purton. Priory pools, and in the Avon, near Warwick. Perry. River Blythe, near Coleshill. *E.*) About Stafford and Tamworth. P. June.†

HYDROCHARIS.‡ Barren and fertile flowers on different plants : *Cal.* three-cleft : *Bloss.* three petals.

B. Sheath two-leaved : *filaments*, the three inner ones style-bearing (beaked. **E.*)

F. Caps. six-celled ; many-seeded ; beneath.

H. MORSUS-RANÆ.

Curt. 167—(*E. Bot.* 808. *E.*)—*Fl. Dan.* 878—*Dod.* 583. 1—*Ger. Em.* 818. f. 2—*Park.* 1252. 4—*Dod.* 583. 2—*Loh. Ic.* i. 596. 1—*J. B.* iii. 773. 1.

(*Plant* floating, sending down from the horizontal stems, long, thick, fibrous radicles. *E.*) *Bud* pendent, on a very long thread-like leaf-stalk, consist-

ser degree. It is supposed likely to yield a useful dye. In drying, it acquires a blueish tint. For a recital of experiments, see *Curt. Fl. Lond.* *E.*)

* (Conjectured from *βες*, an ox, and *τομος*, sharp, as likely to injure the mouths of cattle. *E.*)

† Neither cows, horses, sheep, swine, or goats will eat it. Linn. (It is an ornament to the banks of our rivers and marshy ditches, and may be readily propagated in small ponds, or basins of pleasure grounds.)

“ Her rosy umbels rears the *Flowering Rush*,

While with reflected charms the waters blush.” *E.*)

‡ (From *ὕδωρ*, water, and *χαῖς*, delight ; the pride of the water. *E.*)

ing of convoluted scales resembling leaf-scales, within which are contained the leaves, becoming gradually larger, tiled and convoluted. Linn. *Leaves* round-kidney-shaped, very entire, smooth, fleshy, (purplish underneath,) and, on removing the outer skin when dried, a beautiful close net-work of veins is seen. Woodw. *Blossom* white, (large and elegant, forming a kind of umbel, one only expanding at a time. *Petals* three, evanescent. Grev. E.)

FROG-BIT. Slow streams and wet ditches.

P. June.*

Var. 2. Blossoms double, sweet-scented.

Ditches on the side of Audrey Causey near a wooden bridge in the Isle of Ely, Ray; (but not to be found there in 1802. Rev. R. Relhan. E.)

* (Curtis observes that the whole structure and economy of Frog-bit is exceedingly curious, deserving the minute attention of the inquisitive Botanist. This plant is likewise a desirable acquisition to the *Aquarium*. E.)

CLASS X.

DECANDRIA.

MONOGYNIA.

(1) *Flowers complete ; regular ; of many petals.*

MONOTROPA. *Calyx* like a blossom ; protuberant at the base : *Caps.* five-celled ; many-seeded : (*Anth.* of one cell, and two valves. E.)

PYROLA. *Petals* five : *Anthers* opening with two pores : *Caps.* five-celled ; many-seeded.

[*Geranium. Lythrum salicaria.*]

(2) *Flowers of one petal ; regular.*

(LEDUM. *Cal.* five-toothed : *Petals* five ; (five divisions. Gærtn. *Stigma* five-lobed : *Capsule* five-celled, opening from the base : *Seeds* enveloped in a reticulated membrane. E.)

ANDROMEDA. *Bloss.* bell-shaped, or ovate : *Caps.* five-celled.

ARBUTUS. *Bloss.* ovate, transparent at the base : *Berry* five-celled.

[*Vaccinium Myrtillus* and *Oxycoccus. Chlora perfoliata.* (*Menziesia cœrulea.* E.),

(3) *Flowers incomplete.*

[*Mercurialis.*]

DIGYNIA.

SCLERANTHUS. *Bloss.* none : *Calyx* five-cleft ; superior : *Seeds* two, (one abortive. E.)

CHRYSOSPLENIUM. *Bloss.* none : *Calyx* superior : *Caps.* two-beaked, many-seeded.

SAXIFRAGA. *Bloss.* five petals : *Calyx* with five divisions. *Caps.* one-celled ; two-beaked.

SAPONA'RIA. *Bloss.* five-petals: *Calyx* tubular; naked at the base. *Caps.* one-celled; oblong.

DIANTHUS. *Bloss.* five petals: *Calyx* tubular; with *Scales* at the base: *Caps.* one-celled; oblong.

[*Quercus. Carpinus. Agrimonia Eupatoria.*]

TRIGYNIA.

ARENA'RIA. *Caps.* one-celled: *Petals* undivided; expanding.

STELLA'RIA. *Caps.* one-celled: *Petals* deeply divided: expanding.

SILENE. (*Caps.* of three incomplete cells: *Cal.* of one leaf. E.): *Petals* (mostly) cloven. E.)

CHERLE'RIA. (*Caps.* three-celled: *Cells* two-seeded: De Cand. *Nectaries* like petals; smaller than the cup.

[*Polygonum Bistorta. Quercus. Sambucus Ebulus. Alsine.*]

PENTAGYNIA.

COTYLE'DON. *Caps.* five, adjoining the nectaries: *Bloss.* one petal.

SE'DUM. *Caps.* five, adjoining the nectaries: *Bloss.* five petals.

OX'ALIS. *Caps.* five-celled; angular: *Bloss.* petals connected at the base: (seeds two, tunicated. E.)

LYCH'NIS. *Caps.* one, three, or five-celled; oblong: *Calyx* oblong; membranous.

AGROSTEM'MA. *Caps.* one-celled, oblong: *Calyx* tubular, membranous.

CERAS'TIUM. *Caps.* one-celled: *Petals* cloven: *Calyx* five-leaved.

SPER'GULA. *Caps.* one-celled: *Petals* entire: *Calyx* five-leaved.

[*Adoxa Moschatellina. Geranium. Silene inflata. Arenaria media. Quercus.*]

MONOGYNIA.

MONOTROPA.* *Calyx* none: *Petals* ten, (or eight; five or four. E.), the five outer ones hollowed at the base to contain honey: *Caps.* five-valved.

(Dr. Hooker designates these parts differently; thus "*Corolla* five-cleft or five-petalled; but to me what is usually in addition called a *calyx* appears to be nothing more than *bracteæ* or scales, alternating upon the foot-stalk of flowers as they do upon the stem." E.)

M. HYPO'PITHYS. (Lateral flowers with eight stamens and four petals: the terminal flowers with ten stamens and five petals. E.)

(Hook. *Fl. Lond.* 105. *though the dissections do not exactly accord with the representations of some other authors.* E.)—*E. Bot.* 69—*Fl. Dan.* 232—*Kniph.* 10—*Plot. Ox.* 9. 6. at p. 146—*H. Ox.* xii. 16. 13. 20. *A. B.*—*Pluk.* 209. 5.

(*Stem* scaly rather than leafy, mostly solitary, simple, cylindrical, five or six inches high. E.) *Spikes* at first drooping, when in fruit upright. The whole *plant* (succulent, turning black when dried, E.) is fragrant, and of a pale yellow colour, which peculiarity is generally confined to parasitic plants, and such as grow in very shady situations, (bearing scales rather than leaves, and destitute of verdure; thus in general appearance resembling *Orobanche*, but in particular structure very distinct. E.)

PRIMROSE-SCENTED BIRD'S-NEST. (YELLOW BIRD'S-NEST. E.) Shady woods, growing on the roots of other plants. (From the accurate observations of Mr. Graves, (in *Fl. Lond.*) this does not always appear to be the case: in some instances, they were decidedly not attached to, but only entangled with, the roots of plants, but sometimes connected with decayed leaves and other vegetable substances by a whitish fibrous matter. E.) In Oxfordshire, Bedfordshire, Bucks, Berks, and the Beech woods of Sussex. Woods near Uley, Gloucestershire. Mr. Baker. Shottisham, Norfolk. Mr. Crowe. In a Pine grove, Stoke, Norfolk. Mr. Woodward. Lord Stamford's woods, at Envil, Staffordshire. (Beech Foot in Frith Wood, Painswick. Mr. O. Roberts. At the north-west end of Selborne-hanger, Hants, under shady beeches, to whose roots it seems to be parasitical. White's Nat. Hist. E.) P. July.

(LE'DUM.* *Calyx* five-toothed: *Petals* five, (five divisions. Gart.): *Stigma* five lobed: *Capsule* five-celled, opening

* (Compounded of *μερος*, one, and *τηνω*, to regard; alluding to the Linnean principle of chiefly attending to the single terminal flower for the determination of the class and genus in preference to the lateral ones, as exemplified in the present genus, *Ruta*, *Adoxa*, &c. The older name derived from *υμε*, under, and *αδρυς* a fir-tree, now retained for the species, was deemed objectionable by the great founder of our system. E.)

† (A name adopted from the Greeks, whose *λεδον* is generally believed to be a species of *Cistus*, and applied to the present genus, not very dissimilar, by Linneus. E.)

from the base: *Seeds* enveloped in a reticulated membrane. E.)

(L. PALUSTRE.

Hook. Fl. Lond. 212—Fl. Dan. 1031.

A small branching *shrub*, sub-decumbent and glabrous, the younger branches alone ferrugineo-tomentose. *Leaves* principally in the younger branches, scattered, horizontal or reflexed, linear, revolute at the margin, above channelled, glabrous, beneath densely ferrugineo-tomentose; the younger ones erect, very downy. *Flowers* terminal, corymbose, numerous, bracteated at the base, with the bractæ conspicuous, broadly ovate, membranous, brown, at first pubescent, soon clothed with reddish tomentum, at length sub-glabrous. *Pedicels* long, erect, the exterior ones sub-patent, pubescent, simple. *Calyx* small, persistent, quinquefid, having the segments ovate, patent, externally tomentose. *Petals* rather concave, nerved, white. *Stamens* ten; filaments long, decumbent at the base, afterwards erect, pale purple; anthers oblong, roundish at the base, bluntly emarginate at the apex, and there opening with a pore on each side. *Germen* ovate; style filiform, glabrous; stigma small. *Capsule* oval, pendent. *Seeds* very minute, oblong, covered with a pellucid membrane or arillus.

MARSH LEDUM. Detected by Sir Charles Giesecké, Prof. of Mineralogy in the University of Dublin, on the north-west coast of Ireland, where it seems to be a denizen along with *Papaver nudicaule*; for in the immediate neighbourhood of the station for that plant, namely Achilhead, Prof. Giesecké took the specimen from the hat of a fisherman. In the more northern regions, too, of Europe and America, these two plants are almost always found together. *Hook. Fl. Lond. E.)**

ANDROMEDA.† *Calyx* with five divisions: *Bloss.* more or less egg-shaped; mouth five-cleft: *Caps.* five-celled: *Seeds* few.

A. POLIFOLIA. Umbel of few flowers, terminal: blossom nearly globular, pendulous: leaves alternate, strap-spear-shaped, revolute, (glaucous beneath. E.)

* (The leaves are used as a substitute for tea by the Canadians in their hunting excursions; and by the Norwegians it is called *Finné-thé*, or tea of the Laplanders. It is sometimes substituted for hops; or placed among corn to drive away mice, and to destroy vermin on sheep and oxen. E.)

† (From the constellation so called; these plants prevailing in northern latitudes: or rather, perhaps, from a fanciful allusion to the fate of the princess of that name, whose beauty was doomed to pine on a desolate rock, surrounded by the monsters of the ocean; as her vegetable prototype, hangs her drooping head, suffused with blushes, while possessing in solitude the turfy hillock, in the midst of swamps, and loathsome reptiles. We cannot refrain from inserting the ingenious application of the fable in the words of Linnaeus himself, as given in *Fl. Lapp.*:—"Virgo hæc lectissima pulcherrimæ collo superbit alto et vividissimo, (*pedunculatus*), cæcis facies roseis labellis, (*corolla*;) vel optimum veneris fœcun longè superat; juncea hæc in genera projecta pedibus alligata, (*caulis inferior incumbens*), aqua (*vernali*) cincta, rupi (*monticulo*) adfixa, horridis draconibus (*amphibius*) exposita, terram versus inclinat mæstam faciem, (*stremi*), innocentissimæ brachia, (*ramos*), cælum versus erigit, meliori sedq̃ fitoque dignissima, donèc gratissimus Persæus, (*æstas*), monitis directis, eam ex aqua eduxit e virgine factam fœcundam matrem, quæ tum faciem, (*fructum*), erectam extollit. S; Ovidio fabulam de Andromeda conscribenti hæc anteq̃ oculos posita fuisset planta, vix melius quadrarent attributa, qui more poetico ex humili tumulo produxisset, Olympon." E.)

Dicks. H. S. Fl. Ross. i. 71—(E. Bot. 713. E.)—Fl. Lapp. 1. 2—Pluk. 175. 1—Park. 76. 7—Walc.—Fl. Dan. 54—J. B. i. a. 227. 1—Buxb. v. 55. 1—Ray Ed. i. 1. 1.

(This plant varies occasionally with quadrifid octandrous flowers, in which state it may easily mislead a young Botanist, and be taken for *Menziesia polifolia*. Mr. E. Forster, jun. in Bot. Guide. E.)

(An elegant evergreen shrub, scarcely a span high. A very judicious Botanist suspects that the representation in E. Bot. was taken from a specimen of *A. polifolia* γ *angustifol.* of Willdenow, a Labradorian plant; the British species being var. β *media* of that author.—*Leaves* in a degree acuminate, the upper surface a dull green, shining; beneath hoary in colour with a strong prominent mid-rib. E.) *Blossoms* tinged with red.

MARSH ANDROMEDA. WILD ROSEMARY. POLY-MOUNTAIN. Turf and peat bogs. Yorkshire, Cheshire, Lancashire, Westmoreland, Scotland, (and Ireland. E.) Bogs about Halifax. Mr. Crowe. Causeway Moss, and Rusland Moss, Furness Fells. Mr. Jackson. Thorn Moor, Yorkshire. Mr. Robson. Chartley Moss. Hon. Mr. Bagot. (Prestwick Carr, Northumberland. Mr. Winch. Kirkconnel Moss. Mr. Arnott. Blair Drummond Moss, plentiful. Mr. Murray. Hook. Scot. E.) S. June.

A. Daboecia, See *Menziesia polifolia*.

AR'BUTUS.* *Cal.* with five divisions: *Bloss.* egg-shaped, transparent at the base; mouth five-cleft: *Berry* five-celled, superior.

A. U'NEDO. Stem ligneous: leaves smooth, bluntly serrated: panicle terminal: berry with many seeds.

(*E. Bot.* 2377. E.)—*Hunt. Encl.* 373. iii. p. 91. *Ed.* 2—*Mill.* 48. 1 and 2—*Clus.* i. 47. 2—*Dod.* 804. 2—*Lob. Obs.* 571—*Ger. Em.* 1496—*Park.* 1490. 1—*J. B. i. a.* 83—*Matth.* 270—*Ger.* 1310. 2—*Lonic.* i. 56. 1.

Stem, serratures of the *leaves*, and *flower-scales* coloured. *Calyx*, segments lapping over each other, coloured at the points. *Blossom* greenish white, a little hairy within, sometimes pinkish, very elegant. *Anthers* scarlet, double, opening at the base, with two yellow horns. (*Berries* crimson, the size of a cherry, very like a strawberry, being covered with hard tubercles, but the seeds are internal. Young shoots often red, and rough with glandular hairs. Sm. E.)

STRAWBERRY-TREE. (Irish: *Keorta Caihne*. E.) In the west of Ireland; in the county of Kerry; near the Lake of Killarney. Ray. (And on the islands thereof. E.) On barren limestone rocks there. Mr. Crowe. S. Sept.†

* (Diminutive of *arbo.* a tree; as resembling a tree in miniature. E.)

† It is a beautiful evergreen ornament to our shrubberies, (where also may be observed pink, and double varieties, but the latter are scarcely desirable, as they are incapable of forming the more interesting berries, E.) not only on account of its foliage and flowers, but of its fruit, which is pleasing to the eye, though not grateful to the taste. ("The pitcher-shaped blossoms contain a delicious repast for butterflies of various kinds. Frequently may they be observed busily engaged with their long and elegant proboscis, rifling its hoarded sweets." Wonders of the Vegetable Kingdom. It has been remarked by Mr. Salisbury, that the fruit taking twelve months to come to maturity, this plant exhibits simultaneously, and during the depth of winter, the singular phenomenon of lively green leaves, beautiful flowers, and brilliant fruit: thus realising the exuberant picture of Tasso,

A. ALPINA. Stems trailing: leaves wrinkled, somewhat serrated, and fringed with hairs.

(*E. Bot.* 2030. *E.*)—*Fl. Dan.* 73—*Lightf.* 11. *A. B.* at p. 216—*Clus.* i. 61—*Ger. Em.* 1417. 4—*Park.* 1456. 3—*Ger.* 1230. 4—*J. B. i.* A. 519.

(Woody trailing stems clothed with deciduous bark. Leaves deciduous alternate, obovate, serrated, rugged with reticulated veins, smooth, except a fringe at each side of their taper base. *E. Bot.* Bloss. pinkish, almost white. *E.*) Berries black, globular, sessile on a very small red cup, (the size of black currants. *E.*)

MOUNTAIN STRAWBERRY-TREE. (BLACK-BERRIED ALPINE ARBUTUS. BLACK BEAR-BERRY. Dry mountains, in Scotland and the Western Isles. Garry Moor, Scotland. Mr. Winch. Abundant about Cape Wrath in Sutherland. Hooker. *E.*) S. May.*

“Co' fiori eterni eterno il frutto dura
E mentre spunta l'un, l'atro matura;”

fit emblem of that perpetual spring which, in original perfection, pervaded the whole earth, when

“Green all the year; and fruits and blossoms blush'd,
In social sweetness, on the self-same bough.”

Wheeler observed the fruit in the market at Smyrna; and at Constantinople it is offered for sale threaded on a straw or grass. *E.*) The country people, however, in Ireland, eat it, but always drink water after. (A warmer climate may possibly render the berries more palatable, though the testimony of the ancients is not in favour of their being wholesome food; vid. Pliny, Dioscorides, and Galen. The leaves may be usefully employed in tanning leather. Virgil alludes to the young branches as winter food for goats:—

—— “jubeo frondentia capris
Arbuta sufficere;”

and to its use for making agricultural instruments, or basket work:—

“*Arbutæ* crates:”

while Ovid celebrates its blushing fruit:—

—— “pomique onorata rubenti
Arbutus:”

yet so bitter withal, that Pliny is supposed to have denominated it *Unedo*, because one only can be eaten at a time. Tournefort informs us that a spirituous liquor is distilled from the fruit, especially in the Isle of Andros. The old Italian poet Sannazaro, in his *Arcadia*, represents this truly classical evergreen as employed by the Roman shepherds to decorate their flocks, on the festival of the goddess Pales. It is generally supposed to thrive most luxuriantly in a moist situation. We learn from the “*Bon Jardinier*” of Mr. Pirrolle, that *Arbutus* trees raised from English seed are hardier than those produced from the seed of warmer climates. In the Levant it attains to a great size: in our pleasure grounds sometimes to twenty feet in height; and we can imagine no tree to afford a more refreshing canopy in its luxuriant growth; for we may presume even Horace, (no incompetent judge of luxury,) occasionally sought repose beneath its shade:—

“Nunc viridi membra sub *Arbuta*
Stratus.”

The right of this plant to be considered an aboriginal,

“*Arbutus*, with his scarlet grain,
That richly crowns Irene's plain,”

has been contested by Mr. Smith in his *History of the County of Kerry*, in which he conjectures it may have been introduced by the monks of St. Finnian, who founded the Abbey in the sixth century. *E.*)

* The berries of this species have something the flavour of black currants, but are not so good. Goats refuse it.

A. UVA UR'SI. Stems trailing: leaves oblong, egg-shaped, very entire, slightly reticulated.

(*E. Bot.* 714. *E.*)—*Kniph.* 9—*Fl. Dan.* 33—*Blackw.* 592. 1. 2. and 3—*Fl. Lapp.* 6. 3—*Woodv.* 70—*Lightf.* 11. c. d. at p. 216—*J. B.* i. a. 523—*Zanon.* 178—*Ger.* 1230. 5—*Clus.* i. 63. 2—*Lob. Obs.* 547. 1—*Ger. Em.* 1416. 5—*Park.* 1457. 6.

(*Stems* very long. *Leaves* stiff, rigid, smooth, their margins revolute. *Flowers* in a terminal, drooping cluster, rose-coloured. *Berries* small, red. *E.*)

RED BEAR-BERRY. (RED-BERRIED TRAILING ARBUTUS. Gaelic: *Brailleaga-nan-con.* *E.*) Dry heaths and woods. East Common Wood, near Hexham. Isle of Mull, near to Y-Columb-Kill, growing plentifully for some miles together. Mr. Llwyd. (Common about Blair. Mr. Watt. Summit of Skiddaw. Mr. Woodward. Martindale Head, Ullswater. Hutchinson. On Kinder Scout, near Hayfield, Derbyshire. Mr. L. Howard, in Bot. Guide. Cronkley Fell; Forcegarth Scar; and near Caldron Snout, Durham. Rev. J. Harriman, ditto. West side of the county of Durham. *E.*) §. May—June.*

PYROLA.† *Calyx* with five divisions: *Petals* five: *Caps.* five-celled, opening at the angles: *Seeds* numerous, coated:

P. ROTUNDIFOLIA. Stamens ascending: pistil declining: (cluster many-flowered: calyx as long as the stamens. *E.*)

(*Hook. Fl. Lond.—E. Bot.* 213. *E.*)—*Blackw.* 594—*Riv. Pent.* 137—*Matth.* 982—*Fuchs.* 467—*Trag.* 707—*J. B.* iii. 535—*Dod.* 138—*Ger. Em.* 408. 1—*Ger.* 330. 1—*Clus.* ii. 116. 3—*Lob. Obs.* 157. 2—*H. Or.* xii. 10. row 2. 1—*Park.* 508—*Lonic.* 186.

(*Style* twice the length of the stamens. *Trav.* *Leaves* four or five, an inch broad or more, all springing from the root, nearly circular, obtusely crenate, veined, on leaf-stalks. *Blossoms* white, in a terminal raceme, borne by a peduncle six to eight inches high. *E.*)

ROUND-LEAVED WINTER-GREEN. Woods and groves in the north of England: in the south, rare. Hockfall Woods, near Grewelthorpe, Raydale Wood, near Carr-end. Wensley Dale, and Tennant's Wood, near Kilnsay, Yorkshire. Curtis. Meadows at Gorsestone, Suffolk. Mr. Wigg. Woods of Duplin and Panmure, Angus-shire; and about Loch

* The berries are insipid, pulpy, and mealy, (but afford excellent food for game.) The plant is much used in Sweden to dye an ash-colour, and to tan leather. Half a dram of the powdered leaves given every, or every other day, has been found useful in calculous cases. It was first used for this purpose at Montpellier, and afterwards by Dr. de Haen, at Vienna, who relates several cases, in which it proved of the greatest service. Its success in England has been uncertain. Sometimes the patients found no relief, but thought their complaints rather aggravated than alleviated; whilst, in other calculous and nephritic cases, the symptoms have been almost entirely removed. Perhaps, upon the whole, we shall find it no better than other vegetable astringents; some of which have long been used by country people in such complaints, and with very great advantage: though hitherto unnoticed by regular practitioners. (It is a popular remedy in America, and has the sanction of Dr. Barton in nephritic complaints. *E.*) Horses, cows, goats, and sheep refuse it. (The *Coccus uva-ursi*, which, with alum, affords a crimson dye, is now neglected. *E.*)

† (Adopted by Linnæus from the older authors. It is a diminutive of *Pyrus*, and alludes to the resemblance of the leaves to those of a Pear tree. *E.*)

Ranoch, Perthshire. Mr. Don. (Roslin woods. Dr. Greville. Chartley Moss, Staffordshire. Hon. Mr. Bagot. Seamer Moor, near Scarborough. Mr. Travis. In a wood at Middleton, Suffolk, abundant, found by D. E. Davy, Esq. Hooker. In Castle Eden Dean, Durham. Mr. Winch; also at Birch Carr, in the same county. Mr. Janson. In a shady lane beside a wood above the church at Tintern; also in a wood above the wire-works, sparingly. Mr. W. Christy. Glen-Idra, Derry. E. Murphy, Esq. E.) P. June—July.*

(P. ME'DIA. Stamens regularly inflexed: style deflexed, protruded beyond the flowers: cluster many flowered, with a spiral stalk: calyx shorter than the stamens.

Hook. Fl. Lond.—E. Bot. 1945—Fl. Dan. 110—Swartz. in Stockh. Tr. for 1784. 263. t. 7.

Nearly agrees with *P. minor* in general habit, but differs in its very spirally twisted flower-stalk, and in the declination and much greater length of its style. Stamens regularly incurved round the germen, as in *P. minor*, not directed upwards as in *P. rotundifolia*, neither is the style so recurved as in the latter, nor the flowers so large. E. Bot. A decided character is discoverable in the proportionate length of the styles and the figure of the stigma: the former being full as long as the mature capsule, and upon its incassated, truncated extremity is placed the minute stigma, resembling five small tubercles.

INTERMEDIATE WINTER-GREEN. *P. rotundifolia*. Fl. Dan. This new British *Pyrola* was discovered by Mr. Winch in Scot's Wood Dean, three miles west of Newcastle; also found in East Common Wood, near Hexham, Northumberland; in woods four miles north of Walsingham, Durham; and at Corra Linn, near Lanark; but Mr. Winch says this rare plant does not grow at Studley, Yorkshire. In woods near Forres, belonging to the Earl of Moray. Hooker. Ards, &c. Donegal. E. Murphy, Esq. Cradley Park, near Stourbridge. Scott, in Purt. Ray's plant, found about Halifax is now ascertained by Mr. Roberts Leyland to be this species, not *P. rotundifolia*. Sm. Eng. Fl. P. June. E.)

(Either *P. media* and *minor* are often found growing near together, or the difficulty of distinguishing them must have occasioned some confusion in their localities. E.)

P. MI'NOR. (Stamens regularly inflexed: style the same length, straight; stigma five-lobed, pointless, without a ring: cluster of many drooping flowers. E.)

(Hook. Fl. Lond. 153—E. Bot. 2543. E.)—Fl. Dan. 55—Kniph. 9—Riv. Pent. 136. 1—E. Bot. 158.

(Style same length as the stamens. Trav. E.) Much resembles *P. rotundifolia*, (but the distinction pointed out by Mr. Travis may render the discrimination of these species less difficult. Stem with four angles, one smaller, according to Smith. E.) Two flowering stems frequently arise from the same root. Whole plant smaller and weaker than *P. rotundifolia*, (or *P. media*. E.) Woodw. Anthers with two holes at the base, but not protruded into tubes as in *P. uniflora*. Blossom pale pink or white. E. Bot.

* Flowering stem and blossom appear to be greedily eaten by sheep, so that it is difficult to procure perfect specimens. Mr. Travis. E.)

P. minor and *media* are truly distinct species: here the *style* is wholly included within the blossom, having a five-rayed stigma with lobes patent; whilst *P. media* has a long style, projecting beyond the blossom, and having five erect points at its extremity. The plant under the name of *P. minor* in E. Bot. is a very bad figure, with spreading flowers and acute petals. That of *P. rosea* is a good figure of the true *minor*. Flowers in both a pale rose colour. Hook. E.)

LESSER WINTER-GREEN. (Welsh: *Coedwyrdd bychan*; *Glesyn y gauaf*. *P. rosea*. E. Bot. E.) Woods. (Very frequent in Scotland, where it is the most common species. E.) Near Clapham, Yorkshire. Highlands, and Isle of Skye. Near Tring, Herts. Woodward. (Roslin Woods.* Greville. Stoken Church Woods, Oxfordshire. Hon. Mr. Bagot. Seamer Moor, near Scarborough. Mr. Travis. In Blair Woods, and about Corra Linn; also in Gibside Woods, Durham. East Common Wood, near Hexham. Fir plantation at Catcherside, four miles west of Wallington, Northumberland. Mr. Winch. E.) P. June—July.

P. SECUNDA. (Leaves ovate, acute, serrated: flowers drooping, unilateral: pores of the anthers dilated: style straight: stigma five-lobed. E.)

Dicks. H. S.—(Hook. Fl. Lond. 202—E. Bot. 517. E.)—Fl. Dan. 402—Clus. ii. 117. 1—1—Ger. Em. 408. 2—J. B. iii. 536. 1—Park. 509. 3—H. Oz. xii. 10. row 2. 4.

(Stems branched and tufted, rather straggling. Leaves ovate, veiny, finely and sharply serrated. Stalk a finger's length, bearing several, lanceolate bracteas, and a rather dense cluster of white, fragrant, drooping flowers, all turned to one side. Pet. converging. Valves of the capsule connected by a fine web. Sm. E.) The stamens project beyond the blossom, and the summit beyond the stamens.

SERRATED WINTER-GREEN. Woods. Hazlewood, near Sir Walter Vavasour's Park, Yorkshire, with *P. rotundifolia*. In a dean near Comry, Perthshire. Mr. Don. (On the banks of the river Isla near a cataract called the Reeky Lyn in Angus-shire. Mr. Brown. In Blair woods, Scotland. In Ashness Gill, above Barrow Force, between Keswick and Lowdore, probably the only well authenticated station in England. Mr. Winch, to whom it was indicated by Hutton. E.) P. Sept.

* (The influence of local circumstances is by none felt more forcibly than by the Botanist.

“ Objects which least inspire delight
Take pleasing tints from thee,
And strangely satisfy our sight
From mere locality.”

Still more are the most agreeable associations connected with our science enhanced by the discovery of rare or beautiful plants in situations otherwise calculated to excite emotion; as the elegant *Pyrola* near the picturesque ruins on the banks of the Wye; beside the venerable palace and monastery of Scone; mid the romantic scenery of the falls of the Clyde, where

“ From rock to rock the headlong waters leap,
Tossing their billowy crests in wild career;”

Or by

“ Roslin's towers and bays are bonny!
Craig and water, woods and glen!
Roslin's banks! unpeer'd by ony
Save the muses Hawthornden!” E.)

P. UNIFLORA. Stalk bearing only one flower: (pores of the anthers contracted, tubular: stigma with five pointed rays. E.)

(Hook. *Fl. Lond.* 207. E.)—*E. Bot.* 146—*Riv. Pent.* 139. 1—*H. Ox.* xii. 10. 2—*Fl. Dan.* 8.

(Flower odoriferous, white with red streaks, nearly an inch broad. Leaves nearly circular. Stem one inch high; peduncle two inches long. E.)

SINGLE-FLOWERED WINTER-GREEN. Fir woods (since destroyed, as also this beautiful little plant. Prof. Hooker,) near Brodie House, in Moray, Scotland, plentifully, (discovered by James Brodie, Esq. On the Islands of Harris and Bernera among the Hebrides, gathered about the year 1783, by Mr. James Hoggan. Mr. Gotobed. In 1824, found plentifully, in the woods at Scone, by Mr. Bishop; also by Sir G. Mackenzie, Bart. upon his estate at Coull, in Ross-shire. Hook. E.) P. July.*

DIGYNIA.

CHRYSOSPLENIUM.† *Cal.* coloured, four or five-cleft: *Bloss.* none: *Caps.* two-beaked, one-celled, many-seeded, partly beneath: division of the valves extending but half way down.

C. ALTERNIFOLIUM. Leaves alternate.

Dicks. H. S.—*E. Bot.* 54—*Fl. Dan.* 366—*Walc.*—*Pet.* 6. 10—*H. Ox.* xii. 8. 8—*J. B.* iii. 707. 1.

Larger than the next species, (and somewhat earlier in flowering. Mr. O. Roberts, E.) so that where they grow intermixed this may be known at some distance. *Stamens* three-cornered. *Root-leaves* longer than the leaf-stalks. *Woodw.* Middle *stem-leaves* solitary or alternate. (*Stems* three to six inches high, succulent, angular, decumbent, branched at the summit. *Leaves* kidney-shaped, numerous at the base. *Flowers* in a terminal corymb, small, bright yellow, the central one mostly five-cleft, and decandrous, the others four-cleft. E.)

ALTERNATE-LEAVED SEN-GREEN. GOLDEN SAXIFRAGE. Wet shady woods, along with the *G. oppositifolium*, but less frequent. About Esholt, on the river Air, eight miles above Leeds, plentifully. Mr. Woodward. Boggy grove on Porland Heath, near Norwich. Mr. Woodward. Purlieu Lane, leading from the Wytch to Mathon, Worcestershire. Mr. Ballard. River side and woods at Roslin. Mr. Brown. Moorlands at Belmont, Staffordshire. Mr. Pitt. In a wood at Colton Beck Bridge in Furness Fells. Mr. Jackson. Banks of the Wear, opposite Cocken. Mr. Winch. Baydales, near Darlington. Mr. Robson. (Moat at Naworth Castle, Cumberland. Hutchinsonson. Edge of the mill dam, near the bottom of the Beech Lane, and stream sides, near Tocknells, Painswick. Mr. O. Roberts. Balsal-temple, Warwickshire. Purton. St. Bernard's Well; Arniston and Auchindenny woods. Greville. Ballylast, Tyrone. E. Murphy, Esq. E.) P. March—May.

* (Few plants are better calculated to adorn the wilderness than these truly elegant species; nor is their culture in peaty soil particularly difficult. E.)

† (From χρυσός, gold, and, as is conjectured, φύλλον, a leaf, or, more appropriately in this instance, the petal. E.)

C. OPPOSITIFOLIUM. Leaves opposite.

Curt. 138—(*E. Bot.* 490. *E.*)—*Fl. Dan.* 365—*Dod.* 316. 2—*Lob. Obs.* 336. 1—*Ger. Em.* 841. 2—*Park.* 425. 2—*H. Ox.* xii. 8. 7—*Pet.* 6. 9.

Suckers from the base of the stem, covered with leaves, creeping. *Stem-leaves* two or three pair, circular, with the base lopped on each side, indistinctly and irregularly notched. *Woodw.* *Root-leaves* longer than the leaf-stalks. *Stamens* sometimes only six or seven. *Flowers* bright yellow. *Linnaeus* remarks, that this and the preceding species are very closely allied; but they may at once be distinguished by the very different lengths of their respective root-leaves. (*Stem* two to four inches high, somewhat more branched, and the whole plant paler than in the preceding. *Flowers* mostly four-cleft, and octandrous. The size of this plant varies greatly. The Editor gathered a very diminutive variety on the Winnets, near Castleton. *E.*)

OPPOSITE-LEAVED SEN-GREEN. GOLDEN SAXIFRAGE. Irish: *Gloris*. Welsh: *Eglyn cyferbynddail* *E.*) Moist shady places, sides of boggy rivulets, common. Copse on Polingland Heath, near Norwich. Mr. Pitchford. Moist heaths about Manchester. Mr. Caley. (About Gateacre, near Liverpool. Dr. Bostock. Common about the lanes and streamlets near Painswick. Mr. O. Roberts. In rocky hollow lanes about Selborne, Hants. White's Nat. Hist. In similar situations as the former in Scotland. Greville. *E.*) P. April—May.

SAXIFRAGA.* *Calyx* five-toothed: *Bloss.* five petals: *Caps.* beneath, two-beaked, two-celled, many-seeded, opening between the styles.†

(In our arrangement of the species of this elegant, though versatile and perplexing tribe of plants, we have endeavoured to combine the researches of Smith, Don, (Linn. Tr. vol. 13,) Hooker, and others; venturing, however, to omit several whose specific distinctions appear problematical; and even now including some few which in the opinion of Prof. Hooker might with propriety be reduced to varieties, possibly of either *S. cæspitosa*, or the foreign *geranioides*. *E.*)

(1) *Leaves* undivided; *stem* nearly leafless.

S. STELLARIS. Leaves serrated, elliptic-wedge-shaped: stem naked, branched: petals spear-shaped, two spots upon each: (panicle corymbose, of few flowers.

E. Bot. 167. *E.*)—*Jacq. Col.* i. 13—*Fl. Dan.* 23—*Pl. Lapp.* 2. 3—*Scop.* 13. n. 492. at p. 290—*Pluk.* 58. 2; *Ib.* 222. 4—*H. Ox.* xii. 9. 13—*J. B.* iii. 708. 1.

Leaves in one or more star-like tufts from each root, wedge-shaped, entire at the base, rather indented at the top, slightly hairy, (often purplish beneath, *E.*) *Stem*, one from each tuft. *Branches*, each having at its base a leaf, spear-shaped, entire, or cloven into three, and bearing one

* (From *saxum*, a rock, and *frango*, to break; as growing in the fissures of rocks: or, by some supposed to refer to its virtues as a lithontriptic. *E.*)

† (For a curious instance of the economy of Nature in this family of plants, see the Generic description, vol. 1. p. 238. *E.*)

or two flowers. Woodw. (*Flower-stalks* three to five inches long. *Cul.* closely reflexed. *Pet.* three-ribbed, white, with two yellow spots at the base. E.)

Mr. Dawson Turner remarks the striking difference in this plant occasioned by place of growth. Specimens gathered in a valley near Keswick were nearly a foot high, with leaves about an inch long, and panicked stems of many flowers, while those on the very summit of Snowdon did not rise to an inch in height, and were in all parts proportionably small, except the flower, which was single, and considerably larger than those of the valley. Bot. Guide. E.)

STARRY SAXIFRAGE. Moist rocks, and by the rills of Snowdon, Carnedd-Llewellyn, Cader Idris, &c. In the north of England, and in Scotland. About Buckbarrow Well, Long-sledale, Yorkshire. Curtis. Mountains in Lancashire, Westmoreland, and Cumberland. Mr. Woodward. Between Patterdale and Winandermere. Stokes. On Cniston Fells, with *S. aizoides* and *hypnoides*. Mr. Jackson. On the very summit of Snowdon. Mr. Aikin. (On Ben Lawers, Lomond, and in Glen Crow. On the Styhead; on Mell fell, and in Ashness gill, near Barrow. Mr. Winch. On the Logan rock, Cornwall. Dr. Forbes. Considered by Prof. Hooker to be the most common of our alpine Saxifrages. E.)

P. June—July.

S. NIVALIS. Leaves egg-shaped, scalloped, nearly sessile: stem leafless, (terminating in a dense cluster of few flowers: calyx expanding. E.)

Dicks. *H. S.*—(*E. Bot.* 440. E.)—*Fl. Dan.* 28—*Lightf.* 12. at p. 221—*Ray* 16. 1. at p. 358—*Pluk.* 222. 5—*Fl. Lapp.* 2. 5 and 6.

(A stouter plant than the last, but about the same height. *Leaves* subcoriaceous, glabrous above. *Petals* externally reddish. Hook., with two greenish spots on the inner side. E.) *Leaves* blunt, lying on the ground. *Stem* somewhat hairy. *Petals* blunt, white. Subject to remarkable variations, in appearance as well as size. Sometimes it is exceedingly small, with heart-shaped leaves, flowers collected into a single head, and a strap-shaped leaf at the base. Sometimes it produces only a single flower on a stalk, or two of these rise from one root. At others it bears a number of flowers at the top of the stalk, on fruit-stalks, forming an umbel, or it appears twice as large, with a spike composed of smaller ones as figured in Ray. But in all these states it is easily distinguishable by its leaves, reddish underneath, and purplish pistils. I have observed the same plant flower thrice in one summer. Griff.

(CLUSTERED ALPINE SAXIFRAGE. E.) Summits of the higher mountains of Wales and Scotland. Glyder Vawr, near Snowdon. Pennant. On Ben Lomond and on Malghyrdy. Mr. Don. (On Ben Teskerney, Craig Caillach, and Ben Lawers. Mr. Brown. E.) P. April—Oct.

S. UMBROSA. Leaves egg-shaped, scalloped and cartilaginous at the edge, tapering into dilated foot-stalks: stem leafless: flowers in a panicle.

(*E. Bot.* 663. E.)—*Mill.* 141. 2—*Park.* 738, fig. 2d.—*Par.* 233. 5.

(*Leaves* large, smooth, all radical, crowded. *Scape* six to twelve inches high, slender, reddish and pubescent. *Cul.* reflexed. E.) *Blossom* whitish, with elegant crimson dots, beautiful when moderately magnified.

(In *E. Bot.* pl. 2322 is a figure greatly resembling our plant, and also found on the mountains of Ireland, said to be *S. hirsuta* of Linnæus, and

intermediate between *S. Geum* and *umbrosa*, but whether really and specifically distinct remains for future observation.

S. punctata, of Don, Linn. Tr. xiii. 352. but not of Linnaeus: *S. umbrosa* β. Sm. Leaves roundish, with sharp, tooth-like serratures; the full grown ones erect; foot-stalks elongated; appears likewise to have been found by Mr. Evans in the Lancashire stations, along with *S. umbrosa*. E.)

LONDON PRIDE. NONE-SO-PRETTY. *Geum folio subrotundo majori, pistillo floris rubro*. Tourn. R. Syn. Mountains of Sligo, and on Mangerton in Kerry, Ireland. (In a sloping field a little below Mosely Common, and also on Chap-moss, Lancashire. Mr. W. Evans. In Thorpe Arch woods, near Wetherby. Sir T. Frankland. Between Arncliffe and Horton in Craven, Yorkshire. Mr. Bingley. In Blair woods Scotland, and naturalized on old stone walls in the lane behind Ormathwaite, Cumberland. Mr. Winch. E.) P. June.*

(*S. GE'UM*. Leaves of a roundish, kidney-shaped, sharply-toothed, (somewhat hairy: foot-stalks linear, channelled: E.) stem naked, panicled: capsule superior.

E. Bot. 1561.

Herbage of several leafy evergreen tufts. *Leaves* heart-shaped at the base, hairy on both sides, purplish on the under side. Flower-stalks about a span high. *Leaves*, not elongated at the base into a flat foot-stalk, but standing each on a longish narrow, hairy foot-stalk. *Flower-stalk* viscid, with red, glandular hairs. *Petals* cream-coloured, (not sprinkled with yellow and red spots,) merely marked at the base with a purple line and yellow stain. *Flowers* small. *Calyx* reflexed.

Varieties have been observed of double the usual size, and sometimes the petals exhibit three or four crimson spots, and the leaves are nearly destitute of hairs.

KIDNEY-LEAVED SAXIFRAGE. *S. Geum*. Linn. Discovered by Mr. Mackay, on a mountain near Dingle, county of Kerry, Ireland.

P. June. E. Bot. E.)

(2) *Leaves undivided; stem leafy.*

S. OPPOSITIFOLIA. Stem-leaves opposite, tiled, fringed: (branches single-flowered: petals ovate. E.)

Dicks. H. S.—E. Bot. 9—Curt.—Fl. Dan. 34—Fl. Lapp. 2. 1—Allion. 21. 3
—Pct. 61. 94—J. B. iii. 694. 1—H. Ox. xii. 10. 36.

Stems numerous, thread-shaped, pendulous, or creeping. (*Plant* forming small, dense, tufts. E.) *Leaves* (small, dark green, E.) oval, somewhat running down the stem, in opposite pairs, alternately from each side of the stem, giving the appearance of quadrangularly tiled, all fringed, sea-green, frequently tinged with purple. *Cup* purplish, fringed. *Petals* very blunt, bright purple. Woodw. (*Flowers* terminal, large, handsome. E.)

* (Like many other flowers, this was introduced into gardens from foreign countries long before it was ascertained to be indigenous to our own. As an edging to borders it is much used, but more advantageously, and more naturally displayed on rock work. Being one of the prettiest flowers which will endure a smoky atmosphere, even that of the metropolis, it long ago obtained a correspondent familiar appellation. E.)

PURPLE SAXIFRAGE. Rocks. On the north side of Ingleborough; higher rocks of Snowdon; about Llanberris; Highland mountains; and Isles of Rum and Skye. Curtis. This beautiful plant insinuates its roots into every crevice, and, with its numerous trailing branches, clothes, with a rich tapestry, the perpendicular rocks on the west side of the summit of Ingleborough. Mr. Woodward. On Ben Lomond. Dr. Hope. Ben Vurloch. Mr. Brown. (Calcareous mountains of Leitrim, and Sligo. E. Murphy, Esq. E.) P. April—June.*

S. HIR'ULUS. Stem-leaves spear-shaped, alternate, naked, without prickles: stem upright: (capsule superior: calyx reflexed, obtuse, fringed. E.)

(Curt.—E. Bot. 1009. E.)—Fl. Dan. 200—H. Ox. xii. 8. row 2. 6. a—H. Ox. 6—Gmel. iv. 65. 3—Hall. 11. 3—Chus. Cur. 6—Ger. Em. 1284. 8—Park. 656, the lowest figure—H. Ox. xii. 8. 5—Brey. 106. t. 48.

(Stem solitary, four to eight inches high, sometimes invested with rusty hairs. E.) Stem purple, simple, generally with two or three flowers. Fruit-stalks downy. Leaves not fringed. Petals ribbed, yellow, with tawny spots, towards their base an oblong furrow of two pointed valves, containing honey. Linn. The ribs on the cup and on the petals clearly distinguish it from *S. aizoides*. Woodw. (As also the *germen* superior. E. Bot. Calyx-leaves much shorter than the petals. In many specimens the fruit-stalks only one-flowered, seldom, if ever, more than two-flowered; whilst in *S. aizoides* they bear from three to six much smaller flowers. E.)

YELLOW MARSH SAXIFRAGE. Turf bogs, rare. Knutsford Moor, Cheshire. Ray and Lightfoot. (Near the junction of the Baulder and Blackbeck on Cantherstone Fell, Yorkshire, found by Mr. J. Binks. Mr. Winch. E.) P. Aug.†

S. AIZOIDES. Stem-leaves strap-awl-shaped, sometimes fringed; root-leaves crowded together: stems trailing: (capsule half superior: floral receptacle depressed: calyx spreading. Sm. E.)

E. Bot. 39—Gesn. Op. Schmid. App. f. 4—Scop. 14. at p. 493—Fl. Dan. 72—Chus. ii. 60. 3—Ger. Em. 576. 2—Park. 737. 7—J. B. iii. 693. 2—Pet. 61. 10—H. Ox. xii. 6. row 2.

Stems numerous, ascending, (three to four inches high. E.) Stem-leaves numerous, strap-spear-shaped, scattered, half embracing the stem, sometimes with a few hairs at the edge, but oftener without. Fruit-stalks

* (Well deserving the attention of the florist, especially for ornamenting rock-work. It is regularly sold in Covent-garden market as an acceptable spring flower. Its leaves when submitted to the magnifying glass exhibit additional beauty, bearing some resemblance to those of *Mesembryanthema*. Indeed few objects appear more interesting beneath the microscope than those afforded by the delicate structure of the different parts of Saxifragas. But we are so accustomed to the beauties of nature, that we too often neglect to admire the wisdom that stamps them all, and are never sufficiently grateful for the numerous advantages we derive from them. Thus what ought chiefly to excite man's admiration and gratitude renders him indifferent and insensible. The genuine lover of nature must, however, be exempt from such an imputation, for

"A thousand beauties lost to vulgar eyes
Full to his scrutinizing search are spread." E.)

(This species is also worthy of cultivation, and will flourish in bog earth kept moist. E.)

many, from the bosom of the leaves, of various lengths, the lower ones longest, generally with one flower. *Flower-leaves* two on each fruit-stalk. *Calyx* nearly as long as the blossom. *Petals* blunt, yellow, spotted with orange. Woodw. (*Fruit-stalks* bearing from three to six flowers, much smaller than those of *S. hirculus*; a plant of very different habit.

(Haller, Jacquin, Afzelius, and some British Botanists, have considered *S. autumnalis* of Linnaeus to be no other than dwarf specimens, with leaves less obviously fringed, of *S. aizoides*; but Smith insists that it is distinct from either, though what was really intended still remains in some obscurity. E.)

YELLOW MOUNTAIN SAXIFRAGE. *S. autumnalis*. Huds. Lightf. With. Ed. ii. (Frequent among the northern mountains. E.) Ingleborough Hill, Yorkshire, and in Westmoreland. Beeston Castle, Cheshire; Long-Sledale and Whitsell Gill, near Askrig, Yorkshire. Curtis. In Furness Fells, near the top of a high mountain called the Old Man, in moist places. Mr. Atkinson. (Near Widdy Bank, on Teesdale Forest; rocks by the Irthing at Wardrew, Northumberland; Ashness Gill, Cumberland. Mr. Winch. With *S. oppositifolia* on calcareous mountains of Leitrim and Sligo. Mr. Murphy. E.) P. July—Aug.

(3) *Leaves lobed; stem upright.*

S. GRANULATA. (Radical leaves kidney-shaped, on long foot-stalks, obtusely lobed: cauline ones nearly sessile, acutely lobed: stem panicled: root granulated. E.)*

Dicks. H. S.—(*E. Bot.* 500. E.)—*Kniph.* 1—*Curt.*—*Fl. Dan.* 514—*Mill.* Ill.—*Woodw.* 232—*Ludw.* 120—*Walc.*—*Matth.* 978—*Fuchs.* 747—*J. B.* iii.—*Dod.* 316. 1—*Lob. Obs.* 335. 2—*Ger. Em.* 841. 1—*Park.* 424. 1 and 2—*H. Ox.* xii. 9. 23—*Ger.* 693. 1—*Trag.* 525—*Lonic.* i. 220. 1—*Blackw.* 56.

Branches without leaves. *Cup* a little hairy. *Blossoms* white, large. (*Petals* twice the length of the calyx, veined. *Stem* solitary, upright, four to eight inches high, clothed with hairs, hollow, viscid. *Leaves* palmate notched, sometimes extending in a long flattened leaf-stalk, about an inch wide. *Capsule* half inferior. *Stigma*s not always downy, as described in *E. Bot.* neither is the plant generally tinged with a reddish hue, as there represented. E.)

(Varieties occur near Coventry with very large petals, and also very narrow; so that they might even be taken for distinct species. Bree in Puft. Found with a *double flower* at Mitcham, Surrey, by Professor Martyn; and often thus cultivated in gardens. E.)

WHITE SAXIFRAGE. (TUBEROUS-ROOTED SAXIFRAGE. Welsh: *Llyf-enwy*; *Tormaengwyn*; *Clor y brain*. E.) Dry meadows and pastures. Near Worcester. Beverey, near Worcester. Stokes. Plentiful in a field below Malham Cove, Yorkshire. Wood behind Agecroft Hall, and many other places about Manchester. Mr. Caley. (In Scott's Wood

* (It has been conjectured that these granulations are partly destined to supply nutriment in arid situations where the plant must otherwise perish. Mr. Thomson assures us that on examining a single bulb, we shall find that it is composed of slightly curved granular scales, covered with two coats, and enclosing the plantule, which, on vegetating, bursts the coat and shoots up between the scales. E.)

Dean, and on dry banks at Woolerhaugh-head, Northumberland; Castle Head wood, near Keswick. Mr. Winch. Nicholas meadow; Pigwell quarry, Warwick. Perry. Rhuddgar farm in Llangainwen, Anglesey. Welsh Bot. Salisbury Craigs and King's Park, Edinburgh. Lightfoot. In the Garlic meadows, near Penn's Mill, Erdington, Warwickshire. On the hedge-bank by the side of the Sutton road, opposite Aston Park wall, one mile from Birmingham. E.) P. April—June.

S. CERNUA. Stem-leaves hand-shaped, on leaf-stalks: stem unbranched, one-flowered, bulbiferous.

(E. Bot. 664. E.)—Fl. Lapp. 2. 4—Fl. Dan. 22.

(Plant from three to six inches high. E.) Flowers rather nutant. Stem-leaves smooth, more hand-shaped, and the germen more elevated above the receptacle than in *S. bulbifera*. In that plant, too, the stem is branched, and bears more than one flower. Linn. Very seldom flowering, but always producing its axillary purple bulbs. Br. Fl. Dan. 390. and Gun. Norv. 8. 2. represent this species with two flowers. Root not beaded. Flowers white, rather large. Petals obovate. Germen altogether superior. E.)

(DROOPING BULBOUS SAXIFRAGE. On mountains in the North. Amongst the rocks on the summit of Ben Lawers, Scotland; first found by Mr Dickson, and since observed on Craig Calceach, by Prof. Hooker and Mr Borrer. E.) P. Aug.

(**S. RIVULARIS.** Stem-leaves palmate, on long foot-stalks: the upper floral-leaf egg-shaped: stem undivided, one or two-flowered: germen half inferior.

Hook. Fl. Lond. 213—E. Bot. 2275—Fl. Dan. 118.

Stems decumbent at the base, two or three inches high, scarcely branched but at the bottom, bearing from two to five flowers, on stalks that are slightly downy and viscid. Lower leaves on long stalks, smooth, fleshy, palmate, in three or five rounded lobes, of which the middle one is the largest; one or two ovate or spatulate, undivided leaves accompany the flowers. Petals white, single-ribbed, rounded, (or reddish,) obovate, not much exceeding the calyx, which is half inferior, surrounding the middle of the capsule. Root fibrous, somewhat creeping, E. Bot. Anthers curiously reticulated, or dotted. Sm.

ALPINE BROOK SAXIFRAGE. Alpine rills, in the Highlands of Scotland. Mr. G. Don. Ben Nevis, Mr. Robert Tompson. Ben Lawers. Mr. Dickson. Loch Rannoch. Mr. Somerville. In abundance on almost inaccessible moist rocks on the mountain of Loch-na-gar, in Forfarshire. Mr. Drummond and Prof. Hooker. P. June—July. E.)

S. TRIDACTYLITES. (Leaves wedge-shaped, three or five-cleft: stem branched, leafy: stalks single-flowered, alternate: germen inferior. E.)

Dicks. H. S.—E. Bot. 501. E.)—Curt. 129—Whlc.—Sheldr. 24—H. Ox. xii. 9. 31—Ger. 499. 3—Pet. 61. 8—Scop. 16. 499—Blackw. 212.

(More or less viscid; variable in luxuriance, usually three to five inches high. E.) Turns red after flowering. Hairs terminating in globules. Stems forked, in some situations trailing. Root-leaves tapering down into flat leaf-stalks. Stem-leaves sessile, the upper, and sometimes all above

the first branches, spear-shaped and opposite. *Cup*, mouth with five egg-shaped clefts. *Petals* white, egg-shaped, but little longer than the segments of the calyx.

In very dry situations the plant is found extremely diminutive, with stems unbranched, and all the leaves entire.

RUE-LEAVED SAXIFRAGE. RUE WHITLOW-GRASS. (Welsh: *Toermaen trihys*. E.) Walls, roofs, and amongst rubbish. Very common in Craven, Yorkshire, but rare in Lancashire. Mr. Caley. (Wall top near the mill below the Vicarage, Painswick. Mr. O. Roberts. On walls at Brookham, Surry; at Matlock; Ormathwaite and Keswick. Mr. Winch. Kings Park, Edinburgh. Greville. In the walks at Hatton, near Shiffnal, Shropshire. On the Winnets, near Castleton, Derbyshire. On walls and rocks at Cheddar, Somersetshire. On gravel-walks close to Norton Hall, near Daventry, the seat of B. Botfield, Esq. E.)

A. April—May.*

(*S. muscoides*. Leaves linear, obtuse, smooth, triple-ribbed, undivided, or with two small lateral lobes: flowers few, corymbose: petals nearly linear: calyx almost naked.

Hall. Opusc. t. 1. f. 1—Seg. Veron. v. 1. t. 9. f. 4.

Herb composed of many dense, crowded, leafy tufts. *Leaves* crowded, deep green, smooth on both sides, slightly fringed occasionally. Flowering branches terminal, solitary, erect, somewhat downy and viscid, bearing two or three undivided leaves, and terminating in two, three, or four, corymbose, downy, bracteated, single-flowered stalks. *Germen* hemispherical, downy and viscid. *Cal.* superior, obtuse. *Pet.* almost linear, pale yellow, obtuse, slightly cloven, triple-ribbed, rather longer than the calyx.

MOSSY ALPINE SAXIFRAGE. *S. muscoides*. Wulf. in Jacq. Misc. v. 2. 123. Willd. Sp. Pl. Don. in Linn. Tr. v. 13. 437. *S. caespitosa*. Huds. and With. Ed. ii.; not of Linn. *S. pyrenaica*. Haller. *S. moschata*. With. Ed. 6. Mountains above Ambleside, Westmoreland; and Hudson: confirmed by specimens sent from thence: Mr. D. Don: and cultivated in Kew garden, in 1781, as the true plant of Hudson.

P. May. Sm. Eng. Fl. E.)

(*S. caespitosa*. Radical leaves crowded, three or five-cleft, obtuse, veiny, fringed; lowermost undivided: flowers from one to five or more: germen half inferior, hairy: calyx smoother, obtuse: petals rounded, triple-ribbed.

a. E. Bot. 794—Gunn. Norv. v. 2. t. 7. f. 1—Hill. Elth. t. 253. f. 329. a. β. Sternb. Saxif. t. 23—Fl. Dan. t. 71.—Gunn. Norv. v. 2. t. 7. f. 3. 4—E. Bot. 455.

Herb densely tufted, very variable in luxuriance, number of flowers, and degree of hairiness. *Radical leaves* numerous, more or less crowded, fringed with soft glutinous hairs, such as are generally likewise dispersed over both surfaces; their lower half almost linear, strongly ribbed; upper deeply divided into three or five oblong, obtuse, pointless segments,

* (Gerard remarks: "As touching the qualitie hereof, we have nothing to set downe; only it hath been taken to heale the disease of the nallies called a Whitlowe, whereof it tooke his name, as also Nalle-wort."

made too acute in E. Bot. t. 455. *Leaves* of the flowering stems few, scattered, rather more acute, either undivided or three-cleft, diminishing into *bracteas*. A few of the very lowest *leaves*, on the radical tufts, are also undivided. *Stems* solitary, erect, round, rather hairy and viscid, slightly leafy; in α only two or three inches high, and bearing one to two, very rarely three *flowers*; in β often a span in height, corymbose, with five or six. A root brought from Brandon mountain, and rendered luxuriant by culture, bore nine flowers. The *calyx* of this species, in every state, is half inferior; its segments broad, obtuse, pointless, slightly fringed, glandular, but scarcely hairy, on the surface. *Germen* much more hairy, hemispherical. *Pet.* orbicular, or obovate, rounded, obtuse, entire, white, with a central green rib, sending off two curved lateral ones about the middle none of them quite reaching to the summit. *Stigmas* downy.

TUFTED ALPINE SAXIFRAGE. α . *S. caespitosa*. Linn. Willd. Fl. Brit. Don. *S. grænländica*. Linn. Gunn. *S. tridactylites grænländica*, &c. Dill. Elth. β . *S. decipiens*. Ehrh. Beitr. Sternb. *S. caespitosa*. Oed. Gunn. *S. petraea*. With. *S. palmata*. Fl. Brit. With. Ed. 6.

On the loftiest mountains of Wales and Ireland.

α . On the rocks of Twl dŷ, in Cwm Idwell, North Wales. Mr. Griffith. On the lofty summit of Brandon mountain, county of Kerry. Mr. J. T. Mackay.

β . On the rocks of Cwm Idwell, but in more accessible places. Mr. Griffith. On the Galty mountains, Tipperary. Mr. J. T. Mackay.

P. May—June. Sm. Eng. Fl. E.)

(*S. hirta*. E. Bot. 2291, is suspected to be merely a var. of this species. "It has the habit of the larger var. of *S. caespitosa*, nor is it always more hairy." Sm. E.)

(Prof. Hooker considers *S. clongella* of Don and Smith, E. Bot. 2277, as likewise referrible to *S. caespitosa*, (not to *S. hypnoides*, as inadvertently stated in Eng. Fl.) and remarks on its supposed peculiarity of inflorescence, "a terminal, solitary, simple, single-flowered stalk,"—"some of my specimens from the discoverer himself, Mr. Don, have two or even three flowers upon the same stalk." In Fl. Scot. we also find *latevirens* of Mr. Don arranged under the same comprehensive species. E.)

S. HYPNOIDES. (Radical leaves three or five-cleft; those of the long procumbent shoots undivided: all bristle-pointed and fringed: segments of the calyx ovate: pointed petals obovate: stigmas nearly smooth.

E. Bot. 454. *foliage insufficient*—Freeman Ic. t. 2—Fl. Dan. 348—Lapeyr. Pyren. t. 32—H. Ox. xii. 9. 26—Pluk. Fung. t. 57. f. 7.

Forms dense, elastic tufts, of a light and pleasant green. *Stem* generally solitary, slightly leafy, four or five inches high, terminating in a corymbose *panicle*, of from three to five white *flowers*, whose *stalks* are a little viscid and glandular, as well as the scattered awl-shaped *bracteas*. *Radical* and lower *stem-leaves* linear, channelled, fringed at the base; terminating in three, rarely five, lanceolate, spreading, smooth, bristle-pointed lobes; those on the trailing shoots are almost universally undivided, taper-pointed, with a more conspicuous bristle, and are often accompanied by a pale axillary, oblong bud. *Calyx* half inferior, with broad, acute, pointed, farce ribbed segments. *Pet.* broadly obovate, flat,

triple-ribbed, sometimes tinged with red before expansion; the middle rib occasionally branched near the tip. *Stigmas* spatulate, scarcely downy. Sm. Eng. Fl. E.)

MOSS SAXIFRAGE. LADIES' CUSHION. Rocks and high mountains; likewise abundant on limestone rocks, walls, and roofs, in less elevated situations. Snowdon, and other mountains in Wales, Westmoreland, Yorkshire, Derbyshire, Malham Cove, Cheddar Rocks. About Settle. Curtis. Dovedale, Derbyshire, and the northern counties. Mr. Woodward. Middleton Dale, Derbyshire. Mr. Whately. (Salisbury Craigs, Edinburgh. Mr. Winch. E.) P. May—July.*

(**S. AFFINIS.** Radical leaves five-cleft; those of the trailing shoots mostly three-cleft: lobes linear, pointed: segments of the calyx awl-shaped, pointed, recurved: petals oblong, inflexed at the edges.

INVOLUTE ALPINE SAXIFRAGE. Very distinct from every British species; most resembling *S. hirta*; according to Mr. Don, who, in Linn. Tr. v. 13, describes this plant as having been found by Mr. J. T. Mackay on the top of Brandon mountain, county of Kerry. P. May—June. Sm. Eng. Fl. E.)

(**S. PLATYPETALA.** Radical leaves five-cleft; those of the trailing shoots three-cleft: lobes bristle-pointed: segments of the calyx ovate, pointed, erect: petals nearly orbicular, flat, with many lateral veins.

E. Bot. 2276.

Much like the last, with many procumbent, leafy, hairy shoots, but leaves less lengthened out in their lower part, and all their segments terminate in strong, pale, somewhat cartilaginous, bristly points. *Panicle* rather racemose, of four or five large flowers, on glandular, viscid, bracteated stalks. Segments of the *calyx* short, ovate, erect, conspicuously pointed; the base most glandular. *Germen* broad and short. *Pet.* thrice the length of the calyx, white, with a red stain in the bud, broadly obovate, or almost orbicular, spreading, flat, entire, with three principal ribs united at their base, the two outermost sending forth many spreading short veins. Upper half of the *germen* hemispherical. *Stylus* short. *Stigmas* spatulate, finely downy on the upper side.

BROAD-PETALLED SAXIFRAGE. On Snowdon. Mr. D. Turner. On the Clova Mountains, Angus-shire. Mr. G. Don. (West side of Helvellyn. Mr. Winch. E.) June—Sm. Eng. Fl.

(Considered by Prof. Hooker as a var. of *S. hypnoides*, or possibly of *S. caespitosa*. E.)

(**S. PEDATIFIDA.** Radical leaves kidney-shaped, divided in a pedate manner into seven lobes: panicle cymose, level-topped, many-flowered: calyx superior, with linear-lanceolate segments, as long as the capsule.

E. Bot. 2278.

Increasing by runners, each terminating in a leafy flowering tuft, from which fresh runners are produced. Leaves numerous on the young run-

Cultivated in gardens as an edging for the parterre.

ners, but most crowded at their base, stalked, finely downy and glutinous, kidney-shaped, deeply divided into three principal lobes, of which the central one is often three-cleft, the lateral ones more deeply and unequally three-lobed, giving the whole leaf, though simple, a pedate figure. Lobes variable in breadth on different plants. *Foot-stalks* thrice the length of the leaves, bordered, ribbed, purplish, a little hairy. *Stems* a span high, solitary from the leafy crown of each annual shoot, erect, round, slightly leafy, alternately branched, panicked at the top; their leaves variously divided, often doubly three-cleft, the uppermost undivided. *Panicles* variously corymbose or cymose, with downy glutinous stalks, and narrow linear bracteas; principal one of ten or twelve flowers, one of which is central, the others of fewer. *Fl.* white, small in proportion to the size of the plant, erect. *Cal.* almost entirely superior; its segments erect, acute, three-ribbed, downy and viscid like the *germen*, which they much exceed in length, but the ripe capsule almost equals them in that respect. *Styles* finally much longer than the *calyx*, with nearly smooth *stigmas*. *Caps.* globose. *Lobes* of the young and narrower leaves more acute, and often bristle-pointed.

(PEDATIFID SAXIFRAGE. *S. quinquefida*. Donn Cant. On the mountains of Clova, Angus-shire. Mr. G. Don. P. May—Sm. Eng. Fl. E.)

SCLERANTHUS.* *Cal.* one leaf: *Bloss.* none: *Seed* one (perfect, and one abortive, E.) enclosed in the cup.

S. ANNUUS. (Segments of the calyx erect after flowering: leaves linear subulate: stems slightly pubescent. E.)

E. Bot. 351—*Fl. Dan.* 504—*Trag.* 393—*Lonic.* i. 169. 1—*Dod.* 115. 1—*Ger. Em.* 566. 4—*Park.* 447. 7—*Ger.* 452. 2—*Pet.* 9. 6.

Plant three to five inches high, of rather glaucous green; *stems* slender, filiform, leafy, branched upwards, several from the same root, the lateral ones more or less decumbent. *Leaves* with a tender curve, membranous at the base. *Flowers* small, green, crowded in axillary clusters; *calyx* urceolate, ribbed, with five ovate-lanceolate teeth, white and membranous at the edge, according to Hooker spreading when in flower, erect when in fruit. *Stamens* unequal in length, often fewer than ten, more frequently eight.

(Var. 2. *Perennis*. *S. perennis* of authors. *S. annuus* var. β . Grev. to which probably *S. polycarpus* of Lightfoot may be nearly allied. Membranous border of the calyx segments broader and more conspicuous: leaves more decidedly incurved. E.)

E. Bot. 352—*Kniph.* 10—*Ray* 5. 1. at p. 160—*J. B.* iii. 378. 1—*H. Ox.* v. 29*. row 1. f. 2—*Ger.* 453—*Ger. Em.* 567. 5—*Park.* 427. 2—*Pet.* 9. 7—*Fl. Dan.* 563—*Vuill.* 1. 5.

HAVING bestowed every attention to a point on which high authorities differ, from an examination of various specimens we cannot but admit that the general appearance of what have hitherto been deemed two distinct species exhibits no obvious difference, unless it be in the broader and more conspicuous white membranous margin of the calyx segments of the latter plant, and even this appearance may be observed varying in degree, in both. We therefore concur with Professor Hooker in the

* (From σκληρός, hard, and άνθος, a flower: from the dry, scariosc texture of the calyx. E.)

suggestion, as followed by Dr. Greville, that "*S. perennis* merely owed its character to flowering later in the season, or having, under favourable circumstances, survived the winter." In confirmation of this opinion Dr. Greville adds—"I met with var. *a.*" (*annuus*), "in flower on a wall top, near Kincardine, in May, it having survived the winter and acquired much of the habit of *β*. This spring (March and April, 1823), I have seen it plentifully in flower on wall tops between Corstorphine and Kirkliston."

KNAWEL. Irish: *Dearna Muire*. Welsh: *Dinodd blynyddawl*. *S. annuus* is common in sandy ground and corn-fields: Var. *perennis* (more properly biennial) has been observed abundantly in the neighbourhood of Elvedon, Suffolk. Ray. Snettisham, Norfolk. Mr. Crowe. (Fields above Gateshead, Durham. Mr. Thornhill, in Bot. Guide. Sandy places by the road side between Corwen and Bala. Bingley. Old stone-pits at Creaton, Northamptonshire. Morton. Culford, West Stow, and Ickingham Heaths, Suffolk. Sir T. G. Cullum. E.) B.—P. May—Aug.*

SAPONARIA.† *Calyx* one leaf, tubular, naked at the base: *Petals* five, with claws: *Caps.* oblong, of one cell.

S. OFFICINALIS. *Calyx* cylindrical: leaves egg-spear-shaped.

Curt.—(*E. Bot.* 1060. E.)—*Fl. Dan.* 543—*Woodv.* 251—*Dod.* 179—*Loh. Obs.* 170. 2—*Ger. Em.* 444—*Park.* 641. 1—*H. Or.* v. 22. 52—*Blackw.* 113.

(*Stems* numerous, about eighteen inches high. *Leaves* sessile, opposite, three-fibred, smooth. *Flowers* in a terminal panicle, large, flesh-coloured or white, sometimes double; limb of the *petal* obcordate. E.)

SOAPWORT. BRUISEWORT. (Welsh: *Schônlllys meddygawl*. E.) Meadows and hedge-banks. On Blackheath. Near Morden College, Kent. In Norfolk, not unfrequent. Mr. Woodward. Hedges near Hanley, Worcestershire. Mr. Ballard. On the brink of the river below Preston, Lancashire. Mr. Saville. Somerton and Beverstone, Gloucestershire. Mr. Baker. Use-mire and Howtown, Ullswater; and Akebeck-bridge, by Pooley. Hutchinsonson. On a hedge in Aspatria village, Cumberland, no garden near. Rev. J. Dodd. Hedge bank opposite Mr. Gould's at Dunnington, Warwickshire; banks of the Severn above and below Bridgnorth. Purton. St. Levan, Tresco Island, Scilly. Dr. Forbes. Between the Halfway House and Gad's Hill, in the way to Rochester. E. Bot. Banks of Tyne, near Friar's Goose. Winch Guide. In a hedge near the windmill in Anglesey. • Welsh Bot. Near Roslin chapel. Grev. Scot. On the Gloucestershire side of the river Avon, by the passage at Conham, near Bristol. In a lane leading out of the Newton road from Teignmouth towards Sandy-

* The Swedes and Germans receive the vapour arising from a decoction of these plants into their mouths to cure the tooth-ache. Goats and sheep eat it; cows refuse it. The Polish scarlet grain or cochineal, (*Coccus Polmicus*), is found upon the roots, (especially of the latter var.), in the summer months. (It was formerly collected in large quantities for dyeing red in the Ukraine, Lithuania, &c. and is still employed by the Tatars and Armenians, for dyeing wool, silk, and hair, as also for staining the nails of women's fingers. In Europe its use is generally superseded by the true cochineal, (*Coccus Cacti*), which has been cultivated in the Intendency of Oaxaca, Mexico, several centuries, and of which, according to Dr. Bancroft, 375,000*l.* worth are annually consumed in Britain. E.)

† (From *sapo*, soap; the leaves being substituted for the substance in washing. E.)

gate. By the road side between Star-cross and Exeter, within a mile of the city. E.) P. July—Sept.*

Var. 2. *Hybrida*. Leaves concave, united at the base. Blossom whitish, of a pale flesh-colour at the edge. Ray. Leaves egg-shaped, those beneath the flowers clasping the stem. Calyx sheath-like, ragged at the mouth. Blossom twice as long, with a number of short teeth, accompanied sometimes with green leaves. Specimens from the Herbaria of Bauhin and Hudson. Hall.

Ger. 353—J. B. iii. 521. 2—H. Ox. v. 53—Park. 641.

Saponaria concava anglica convoluta folio. Park. 641. *Gentiana concava*. Ger. Em. 435.

A singular variety, found by Gerard in a wood called the Spinnie, near Litchbarrow, Northamptonshire; but Morton informs us it is no longer to be met with there, not being capable of propagating itself by seed. (Recently found by Dr. Bostock on sand-hills a few miles north of Liverpool. E.)

DIANTHUS.† *Cal.* cylindrical, of one leaf, with from two to eight scales at the base: *Petals* five, with claws: *Caps.* cylindrical, one-celled.

(1) *Flowers aggregate.*

(*D. barbatus*, whence the Sweet-William of the gardens, found growing on a lime-stone wall, at King's Weston, near Bristol; on a marl bank in Studley woods, Yorkshire; and recently, by Mr. W. Christy, in Croom-hurst wood, Addington, Surry; is nevertheless considered to have no just claim to rank among British native plants. E.)

D. ARME'RIA. Flowers in tufts: scales of the calyx spear-shaped, downy, as long as the tube: petals serrated.

(*Hook. Fl. Lond.* 134—*E. Bot.* 317. E.)—*Fl. Dan.* 230—*J. B.* iii. 335. 2—*Lob. Ic.* i. 448. 2—*Ger. Em.* 594. 11—*H. Ox.* v. 25. 20—*Pct.* 56. 5—*Sequier.* i. 7. 4—*Matth.* 579.

(*Stem* a foot or a foot and a half high, erect, rounded, geniculated, branched, glabrous, with the branches slightly hairy. *Leaves* linear-lanceolate, the lower ones largest and more obtuse; the upper ones acuminate; all of them opposite, entire, erecto-patent, connate, pubescent towards the base, glaucous green. *Petals* five, with very long claws, the border patent, ovate,

* Whole plant bitter. Bruised and agitated with water, it raises a lather like soap, which washes spots out of clothes, (whence called *Fuller's-herb.* E.) A decoction of it, applied externally, cures the itch. The Germans use it instead of sarsaparilla in syphilitic complaints. M. Andry, of Paris, cures violent gonorrhœas by giving half an ounce of the inspissated juice daily: and with the extract, and a decoction of the leaves and roots, M. Jurine removes ulcers, pains, and emaciations, which have resisted the use of Mercury. *Journ. de Med.* t. lxvi. p. 478. (The double and pale purple varieties are admitted into gardens. E.)

† (From *dios*, Jove, and *anthos*, a flower; the flower of the gods; from the singular beauty and fragrance of several species.

"The brave *Carnation* then, with sweet and sovereign power,

* * * * *
Then th' odoriferous *Pink*, that sends forth such a gale
Of sweetness." E.

purplish rose-colour, crenate at the extremity, having principally at the base oblong white spots and a few long hairs. *Anthers* purplish, oblong. *Styles* two, filiform, pubescent. Hook. E.)

DEPTFORD PINK. (Welsh: *Pennigan y porfeydd*. E.) Gravelly meadows and pastures (more rare in the north. E.) Charlton Wood, and elsewhere in Kent. Near Croydon. Norfolk, frequent. Mr. Woodward. Near Ketley, Shropshire, in gravel; Clarkton Leap, Worcestershire, in marl. Stokes. About Pershore and Eckington. Nash. (Teignmouth and King's Teignton. Rev. J. Pike Jones. On Sunderland Ballast Hills. Winch Guide. By the side of the road from Warwick to Norton Lindsey, a short distance beyond the cross. Perry. Below the old deer-park at Penmon, and Anglesey. Welsh Bot. In fields near the seat of C. Gray, Esq. of Carse, Angus-shire. Mr. G. Don. Hook. Scot. E.)

A. July.

D. PRO'LIFER. Flowers in heads: scales of the calyx egg-shaped, blunt, pointless, taller than the tube.

Fl. Dan. 221.—(*E. Bot.* 956. E.)—*Kniph.* 7—*Sequier* i. 7. 1—*J. B.* iii. 335. 1—*Lob. Ic.* i. 450. 1—*Ger. Em.* 599. 5—*Park.* 1338. 1—*H. Or.* v. 25. 21.

(*Herb* grass-green, smooth, except the edges and ribs of the short, linear, acute *leaves*, which are rough with minute sharp teeth. Sm. E.) *Stem* usually simple, upright, slender: (variable in height. E.) *Flowers* nearly concealed by the scales of the calyx, opening one at a time in continued succession. Woodw. (*Capsule* cylindrical, containing many flat, black seeds. E. Bot. E.) *Blossoms* red, sometimes white; expanding about eight in the morning, and closing about one in the afternoon.

CHILDING or PROLIFEROUS PINK. Sandy meadows and pastures; (not frequent. E.) Selsey Island, Sussex. Rev. Mr. Manningham. Dill. Near Norwich. Mr. Woodward. In a marl pit at Landridge Hill; Hanley Castle, Worcestershire. Mr. Ballard. (Meadows between Hampton Court and Tuddington. Merrett. E.)

A. July.

(2) *Flowers* solitary; several on the same stem.

D. CARYOPHYLLUS. Scales of the calyx almost rhomboid, very short: petals irregularly notched, (beardless. E.)

E. Bot. 214—*Dod.* 174.*—*Ger. Em.* 591. 1—*Pet.* 56. 1.

(*Herbage* glaucous. *Stem* panicled. *Leaves* finely toothed just above the base, linear, channelled, fasciculated. *Flowers* several, but not in bundles. *Scales*, the two outermost narrower than the inner ones, which are broader than they are long. *Petals* smooth at the orifice, pale flesh-colour, fragrant. Sm. E.)

(CLOVE PINK, or more properly, WILD CARNATION. E.) On old walls. Rochester, Deal, Sandown, and other castles, plentifully. Ray. Leverington near Wisbeach, (and on the walls of Chippenham Park. Relhan. Tower on the wall at East Ham, Essex. Mr. Dillwyn. Walls of Cardiff Castle. Dr. Turton. Walls of Ludlow Castle. Dr. Evans. Bot. Guide. E.)

P. June—July.*

* (Gardeners well know that from the seed of the Carnation, Pinks are never obtained, nor from that of Pinks can Carnations be procured. In fact these favourite flowers originate from distinct species, and are not mere varieties of the same, as has been erroneously, and even recently, intimated. The art of floriculture, sometimes despised with a reprehensible

D. DELTOIDES. Scales of the calyx two, egg-spear-shaped, acute: petals notched at the end: (leaves bluntnish, somewhat downy. Sm. E.)

(*Hook. Fl. Lond.* 195. E.)—*E. Bot.* 61—*Fl. Dan.* 577—*Clus.* i. 285. 1—*Lob. Ic.* 444. 1—*Ger. Em.* 593. 6—*Pct.* 56. 2—*J. B.* iii. 329. 4.

(*Plant growing in elegant tufts.* E.) *Root* slender, long, with a few fibres. *Barren stems* numerous, reclining, throwing out roots; *flowering stems* six to eight inches high, cylindrical, slender, weak, jointed (more upright. E.) *Leaves* very narrow, in opposite pairs, embracing the stem; those of the barren branches narrower, not much pointed. *Flowers* two or three on a stem. *Blossom* reddish, with a ring of deeper-coloured dots surrounding the eye. *Seeds* chaffy, brown. It flowers during the summer and till autumn. *Ray.* *Fruit-stalks* single or in pairs. *Flowers* palish red, sometimes deeper, always with a circle of deep-coloured dots at the base of the limb. (*Stems* numerous, decumbent. E.)

Var. 2. Glaucus. (Leaves glaucous, scales of the calyx mostly four; flowers, white, with a purple circle. E.)

Dill. Elth. 298. 384.

In other respects differs very little from *D. deltoides*. Lightf.

D. glaucus. Linn. Common in gardens. King's Park, Edinburgh. Light-foot.

degree of fastidiousness, has in this instance transformed a plant comparatively obscure, into one of the most delightful charms which the lap of Flora contains. The surprising metamorphoses which the most indifferent are accustomed to contemplate with pleasure, were probably commenced beneath a more genial sky than that of Britain; for we learn from Pliny that these productions were unknown to the Greeks, and equally so to the Romans until the Augustan age, when they were obtained from the brave Biscayan, as one trophy resulting from the conquest of that province, and were thence called Cantabrica. Our gardens may now receive embellishments from more than three hundred different kinds of Carnations, under the denomination of Flakes, Bizarres, and Picotees, (Picquettes, spotted); and these may be propagated by cuttings, but more successfully by layers about the month of July. Surely floriculture must at least be deemed an innocent amusement; and that which could excite the admiration of the most powerful intellect cannot be altogether insignificant.

* * * "The fairest flowers of the season
Are our Carnations, and streak'd Gillyflowers.

* * * * *
* * * "This is an Art
Which does mend Nature, change it rather, but
The Art itself is Nature."

Nor can we dissent from Knox when he asserts, "Not he alone is to be esteemed a benefactor to mankind who makes a useful discovery, but he also who can point out and recommend an innocent pleasure. It is obvious, on intuition, that Nature often intended solely to please the eye in her vegetable productions. She decorates the floweret that springs beneath our feet in all the perfection of external beauty. She has clothed the garden with a constant succession of various hues; even the leaves of the tree undergo a pleasing vicissitude. To omit a single social duty for the cultivation of a flower were ridiculous as well as criminal; but to pass by the beauties lavished before us, without observing them, is no less ingratitude than stupidity." Still less from a more modern writer; "To God all the parts of Nature are equally related. The flowers of the earth can raise our thoughts up to the Creator of the world as effectually as the stars of heaven; and till we make this use of both, we cannot be said to think properly of either." E.)

MAIDEN PINK. Sandy meadows, pastures, and heaths. Near Nottingham; on the road to Lenton in Bedfordshire. Mantham Hill not far from Slough, near Windsor; Hildarsham, Cambridgeshire; Bridgnorth, Shropshire; near G. Strickland, Westmoreland, and about Hampton Court Park. Ray. Dupper's Hill, near Croydon. Hudson. Near Whitewood, Gamlingay, Cambridgeshire. Relhan. King's Park, Edinburgh. Eightfoot. Cley, Norfolk; and Cheddar Rocks, Somersetshire. Mr. Crowe. Near Bury, Suffolk. Mr. Woodward. Hills between Bakewell and Chatsworth. Mr. Whately. Sand Banks near Wollerton, Nottinghamshire, on the road from Derby to Nottingham. Mr. Saville. Blackford Hill plentifully, and many other places in Scotland. Mr. Brown. (Between Woller and Earl; also on Ratcliff Crag, and near Belford, Northumberland; Fountain's Abbey, Yorkshire. Mr. Winch. In the glen at Avon Farm,* (near Keynsham, Somerset. Mr. Fox. E.)

P. July—Oct.†

(3) *Stem herbaceous, single-flowered.*

D. CÆ'SIUS. Stem mostly single-flowered: scales of the calyx roundish, short: petals irregularly toothed, hairy: leaves rough at the edges. E. Bot.

Dill. Elth. 298. 385—*E. Bot.* 62.

Stem trailing, the flowering branches rising upwards. *Leaves* bluish green, soft to the touch, but finely serrated with pointed semi-transparent glands at the edges. *Calyx* scales either two or four. *Petals* with short stiffish purple hairs at the base of the limb. *Flowers* pale pink.

MOUNTAIN PINK. *D. virgineus* β. Linn. *D. glaucus*. Huds. (A very rare plant; growing on calcareous rocks, as those of Cheddar, Somersetshire. E.)

P. July.‡

TRIGYNIA.

SILENE.§ (*Calyx* of one leaf, tubular, often ventricose, quinque-dentate: *Petals* five, clawed: limb notched, or bifid. *Caps.* three (imperfect) cells, six-toothed, many-seeded. E.)

* (Probably the site of a Roman *trajectus* sepulchral urns having been discovered in the adjacent rock, and a ferry remaining to the day. E.)

† (In some parts of Hungary, this plant dried in the sun, and steeped in wine, is much used to cure the ague. Twinnson's Travels. From this species are derived numerous varieties which adorn our gardens, and which like the Rose, are so pre-eminent as to be used as an expression of surpassing excellence, as "the very *Pink* of courtesy," Shaks.—"the *Pink* of puppies"—Young: "the *Pink* of the dairy," &c. E.)

‡ (This species is worthy of being introduced on ornamental rock-work; and will sometimes display itself to great advantage when merely inserted in the crevice of a wall, speedily assuming a pendent character to the extent of several feet, and then covered with a profusion of pink blossoms make a beautiful appearance for weeks together. It is easily propagated, and well known to the inhabitants of Cheddar, who produce the roots with alacrity to strangers. E.)

§ (A name said to have been given by Linnaeus in allusion to the viscosity of these plant but its derivation is obscure. E.)

(*S. OTITES*. Panicle with tufted, somewhat umbellate, upright branches: flowers dioecious: petals linear, undivided, naked: leaves spatulate, roughish. Sm. E.)

E. Bot. 85—*Kniph.* 12—*Fl. Dan.* 518—*Clus. i.* 295. 1—*Ger. Em.* 593. 1—*J. B.* iii. 350. 2—*Pet.* 57. 11—*Ger.* 396. 1—*H. Oz.* v. 20. 5.

(*Stem* from one to two feet high, leafy, downy, very clammy about the middle of the upper joint, below the panicle. *Leaves* small, viscid, each tapering into a long foot-stalk; radical ones two or three inches long. *Flowers* numerous, inconspicuous. *Petals* sometimes wanting, quite entire, without scales. Sm. E.) The barren plants bear more flowers, and in closer panicles than the fertile. I have examined many hundred plants; but never met with one with stamens and pistils in the same calyx. Woodw.; though the barren flowers sometimes produce imperfect pistils, and the fertile imperfect stamens. *Root-leaves* lying in a circle on the ground. *Blossom* pale yellowish or greenish white.

SPANISH CATCHFLY. (*S. Otites*. *Fl. Brit.* *Cucubalus Otites*. Linn. E.) Gravelly pastures. Gravel pits on the north side of Newmarket, and between Barton Mills and Thetford, Norfolk. Near Swaffham and Narborough, Norfolk. Mr. Woodward. P. July—Aug.

S. ANGLICA. (Hairy and viscid: petals slightly cloven: flowers lateral, alternate, erect: lower capsules spreading or reflexed. Sm. E.)

Curt. 266—(*E. Bot.* 1178. E.)—*Dill. Elth.* 309. 398.

(*Plant* varying greatly in size. *Stem* spreading or recumbent, swollen above each joint. *Leaves* spear-shaped one to two inches long, E.); *flowers* axillary; *fruit-stalks* hairy, clammy, at first upright, then bent back, and at length when the seeds are quite ripe, upright again. *Petals* white, either entire or notched at the end. *Curt.* (Sometimes faintly tinged with red. Sm. E.)

ENGLISH CATCHFLY.* SMALL CORN CAMPION, with the smallest white flower. Ray. (Welsh: *Glydlyst brutanaidd*. E.) Sandy corn-fields. Near the Devil's Ditch, Cambridgeshire. About Combe Wood, Surry; and near Newport in the Isle of Wight. Road side between Dundee and St. Andrew's. Corn-fields in several parts of Fife-shire, Angus-shire, and Perthshire. Mr. Brown. (At Lakenham and Costesy, near Norwich. Sir J. E. Smith. Frequent in sandy corn-fields in Norfolk and Suffolk. Mr. Woodward. On Sunderland Ballast Hills. Winch Guide. Corn-fields at King's-teignton, Devon; and near Pengerswick castle, Cornwall. Rev. J. Pike Jones. In Anglesey, about Aberfraw, and Llanedwen. Welsh Bot. E.) A. June—July.

S. (QUINQUE-VULNERA). Petals very entire, roundish: flowers lateral, alternate, upright, as are the capsules: calyx somewhat shaggy. Sm. E.)

E. Bot. 86—*Kniph.* 8.

Plant less hairy and less viscid than the preceding. *Limb* of the petals white, with a blood-red blotch at the base.

* (The different species, by their viscosity, may be supposed to detain insects, thus constituting one kind of *Muscaph.* E.)

VARIEGATED CATCHFLY. *S. anglica*. Kniph. (*Lychnis vulnerata*. Scop. E.) Sandy corn-fields about Wrotham, Kent. Hudson. (In a like situation at Crosby, near Liverpool. Mr. Shephard. E.)

A. June—Aug.*

S. NU'TANS. (Petals deeply bifid: each with an acute cloven scale: calyx ribbed: panicle branches unilateral, drooping: leaves egg-spear-shaped, pubescent. E.)

(*E. Bot.* 465. E.)—*Fl. Dan.* 242—*Clus. i.* 291. 1—*Gcr. Em.* 470. 8—*Park.* 631. 5.

Stem simple, cylindrical, a foot high, with three joints below the panicle, beset with clammy hairs. *Leaves* spear-shaped, with short hairs. *Root-leaves* on short leaf-stalks, forming a close turf. *Petals* white, narrow, cloven more than half way down; segments scalloped at the end, rolled inwards in the day time. *Claws* of the blossom twice as long as the calyx. *Stamens* white, twice as long as the claws of the petals. *Styles* three, white, as long as the stamens. Linn. *Stem* frequently branched from the root. Woodw.

(Var. 2. *Lychnis major noctiflora Dubrensis perennis*. Ray. Syn. 240. *Cucubalus viscosus*. Huds. not of Linn. *Silene paradoxa*. Sm. Fl. Brit. not of Linn. *S. nutans*, β. Eng. Fl. Plant less viscid; leaves broader. Mr. G. E. Smith, who enjoys peculiarly favourable opportunities of examining this var. *Dubrensis*, describes it as having "broad petals, and broader leaves; a delicate habit, and distilling from its pale yellowish-white flowers the most fragrant scent." The commoner *S. nutans*, the same writer observes, is "stained with a dull red in its foliage, stem, and petals." It may be gathered in the same neighbourhood. It will be perceived that Mr. Griffith likewise finds them together. E.)

DOVER CATCHFLY. On Dover Cliffs. Mr. Newton. Ray. Rocks above the mine works at Daler göch, Flintshire. Mr. Griffith. E.)

On comparing Ray's plant with the fig. of *Clusius*, referred to by Linnæus, and with the full description of the latter in *Fl. Succ.* I cannot perceive wherein the difference consists. I have been favoured with a specimen of the Swedish *S. nutans* by Professor Thunberg, which only differs from our plant in having smaller leaves.

(Mr. L. W. Dillwyn finds *S. nutans* growing plentifully on the cliffs about Dover, and on Sandgate Castle, Kent, and considers it undoubtedly the same as that which the Editor has gathered on Nottingham Castle walls. E.)

NOTTINGHAM CATCHFLY. Mountainous meadows. Rocks in Dovedale, Derbyshire. Mr. Woodward. Near Gloddaeth, Carnarvonshire. Penn. Wales. (On the rocks of Daler göch, near Prestatyn, Flintshire. Mr. Griffith. Foot of North Queen's Ferry Hill. Mr. Brown. At Knaresborough. Mr. Winch. On the entrance gateway of Nottingham Castle. E.) P. May—July.†

* (Commonly introduced into gardens, where its lively flowers are acceptable. E.)

† (The Nottingham Catchfly, so named in consequence of Nottingham being the first, and for many years, the only place, in which it was known to grow in Great Britain, ranks foremost in local interest, and is not undeserving of notice for its beauty, its evening sweet scent, and the singular viscid matter its stalk is smeared with, serving to catch and imprison small insects which alight upon it.

The original discoverer of this rare plant was T. Willisel, one of the earliest and most industrious investigators of English Botany. Ray subsequently noticed it when he accompanied his amiable friend, and truly generous patron, Willoughby, the celebrated

(*S. INFLATA*. Flowers more or less paniced: calyx inflated, smooth, veined: leaves egg-spear-shaped, acuminate.

Var. 1. *major*. BLADDER CAMPION OF CATCHFLY. SPATLING POPPY. WHITE BOTTLE. Welsh: *Glydlys Codruth*; *Llys y poer*. *S. inflata*. Sm. Var. *a*. Hook. Grev. *Cucubalus Behen*. Linn. In corn-fields, pastures, and by way-sides, common. Stems erect, many-flowered; petals scarcely crowned.

Fl. Dan. 914.—*E. Bot.* 164.—*Kniph.* 12.—*J. B.* iii. 356.—*Pet.* 57. 2.—*Blackw.* 268.—*Clus.* i. 293. 2.—*Dod.* 172.—*Lob. Obs.* 184. 1.—*Ger. Em.* 678. 2.—*Park.* 263.—*Ger.* 550. 2.—*Trag.* 130.—*Lonic.* ii. 33.—*H. Ox.* v. 20. 1.

Var. 2. *minor*. SEA CAMPION OF CATCHFLY. Welsh: *Glydlys arfor*; *Gwlydd y geift*. *Cucubalus Behen* β . Linn. *Silene amœna*. Huds. and Lightf. *S. maritima*. With. Sm. *S. inflata*. Var. β . Hook. Grev. Stems procumbent at the base, few-flowered; petals crowned. Sandy places on the sea coast, frequent.

E. Bot. 957.—*Fl. Dan.* 857.—*Lob. Adv.* 143, and *Ic.* 337.—*Tab. Ic.* 676. xiii. —*Ger. Em.* 469. 2.—*Bauh. Hist.* iii. 357. 1.—*Ger.* 382. 2.—*Park.* 639. 3 and 4.—*Pet.* 57. 1.—*H. Ox.* 20. 2.

Plant more or less glaucous. *Stem* naked upwards, branched, from a few inches to one or two feet in height. *Leaves* ovate, egg-spear-shaped, or nearly strap-shaped, from a half, to one and a half inch long, from one-eighth to three-quarters of an inch broad, generally in pairs, sessile, single-ribbed, always more or less pointed or even mucronate, bordered either with a smooth semi-transparent line, or irregularly, with glandular prickles, often so minute as to be scarcely perceptible to the naked eye. *Bractææ* in pairs, below each partial stalk. *Calyx*, and sometimes the whole plant, but not invariably purplish. *Panicle* terminal, bifurcate, or more; the number of *flowers*, often three on each fork with one central, or only single-flowered, while luxuriant specimens bear from twenty to thirty. *Flowers* white, stalked; *petals* cloven. *Cal.* reticulated with coloured veins, elliptical. *Styles* three, four, or five.

S. inflata has been observed near Cromer, Norfolk, by Mr. Dawson Turner; in the parish of Llangoed, Anglesey, by the Rev. Hugh Davies; on the banks of Clyde at Old Kilpatrick, and at the ferry, Clyde iron-works, by Mr. Hopkirk; with the leaves and stem densely clothed with short hairs.

In garden specimens of Var. 2, the limb of the petal becomes considerably dilated, and when this var. is found on mountainous situations it is said to be *S. uniflora* of De Candolle.

The above general description is derived from the examination of a great number of specimens obtained from different parts of England, and especially at this time, (July 1827), in a recent state, both from the upland

naturalist, to Wollaton, in 1670, for the purpose of investigating the natural history of that neighbourhood. It was first published in his Catalogue of English Plants, which came out the same year, and the walls and rocks about Nottingham Castle have ever since been handed down as a station in all works on British Botany. Deering, in his Catalogue of Plants, pointed out a second place of growth, the rocks at Sneinton Hermitage, about a mile to the East of Nottingham Castle. It still grows in both the situations above mentioned, as well as about the rocks and excavations in Nottingham Park, on the west side of the Castle. The time when the flowers first open is the second week of May, exactly the same as in Ray's days: it continues flowering for the space of six weeks. The flowers of this plant expand fully only in the evening, at which time the petals are deflexed like those of *Cyclamen*. Ordoyno.

district of South Devon, and the sands of the sea-shore at Teignmouth; whence, likewise, we infer, that no permanent characteristic can be deduced from the number of flowers in the panicle, the more or less cloven petals, the position of the stem, or the shape of the leaves. We even doubt the possibility of establishing permanent varieties in these plants, and are convinced that by transmutation from mere locality, *S. inflata* of pastures and way-sides becomes *S. maritima* in such arid stations as the sea-shore, and *vice versa*, in every intermediate gradation. E.)

S. ARME'RIA. (Petals nearly entire, each with a double scale: flowers in level-topped panicles: leaves in pairs. E.)

(*E. Bot.* 1398. E.)—*Kniph.* 8—*Fl. Dan.* 559—*Clus. i.* 288. 1—*Dod.* 176. 4—*Lob. Obs.* 242. 3—*H. Oz. v.* 21. 26—*Ger.* 481. 2.

Whole plant smooth. Stem upright. Leaves oblong, the upper heart-shaped. Flowers terminal, the end of the branches sub-dividing into forks, the forks close together. Petals notched at the end. Teeth of the crown acute, expanding. Linn. (Stem with a brown, hairy, glutinous ring under two or three of the upper joints, by which small flies are caught. Sm. Leaves sea-green, opposite, egg-oblong, sessile. Petals pale red, slightly notched at the end. Flowers numerous. Plant twelve to eighteen inches high. E.)

COMMON or LOREL'S CATCHFLY. Corn-fields, gardens, (from which it may have originally escaped; E.) and old walls. Banks of the river half a mile below Chester. Dr. Richardson. (In a corn-field at Weybridge, with *S. anglica*. Mr. Borrer, in Bot. Guide. E.) A. July—Aug.

S. CO'NICA. Petals cloven: calyx of the fruit conical, with thirty scores: leaves soft.

(*E. Bot.* 922. E.)—*Jacq. Austr.* 253—*J. B. iii.* 350. 1—*Lob. Ic. i.* 338. 2—*Ger. Em.* 470. 6—*Park.* 633. 11.

(Plant greyish green, downy. Stem from a few inches to two feet high, dichotomous, leafy. Leaves opposite, united at the base, sessile, strap-spear-shaped. Flowers fine red, few, fragrant towards evening; petals small, each with a deeply divided scale, and the claw having an angular tooth on each side. D.)

(CORN CATCHFLY. E.) Sandy corn-fields. A little to the north of Sandown castle, plentifully. Sherard and Rand. R. Syn. Ed. iii. (Opposite the Warren House at New Romney, Kent. Rev. Mr. Stacy. Hebburn Ballast Hills, Durham. Mr. Waugh, in Bot. Guide. Common on the range of sand hills, beginning at Deal and running eastward of Sandwich. Dillwyn, ditto. In a field near Iwerley, Worcestershire. Purton. E.) A. June—July.*

S. NOCTIFLO'RA. Petals cloven, (each with a cloven abrupt scale: E.) calyx with ten angles, its teeth as long as the tube: stem forked.

* The leaves boiled have something of the flavour of peas, and proved of great use to the inhabitants of the island of Mindra, in the year 1685, where a swarm of locusts had destroyed the harvest. The Gothlanders apply the leaves to erysipelatous eruptions. (Bryant, in M. Dietetica, recommends the cultivation of this plant; the young tender sprouts, improved by proper management, would, he expects, amply reward the agriculturist. E.)

E. Bot. 291—*Cam. Hort.* 34—*H. Ox.* v. 20. 12.

Stem (one foot or more high. *E.*) upright, hairy, rather viscid. *Leaves* broad-spear-shaped, hairy, (two or three inches long. *E.*) *Flowers* solitary, on fruit-stalks, slanting, whitish. *Calyx* cylindrical; when in fruit, globular-egg-shaped, full of seed, scored, with a net-work of veins; teeth nearly as long as the calyx. *Flower* opening at night, sweet-scented in the summer, not so in the autumn. *Linn.* *Leaves* growing together at the base. *Flowers* few, in the bosom of the upper leaves, and terminal, mostly nodding. *Seed-vessel* upright. *Woodw.* *Blossom* whitish, with a pinky tinge, only expanded in the evening.

NIGHT-FLOWERING CATCHFLY. Corn-fields, in sandy soil, between Newmarket and Canvas Hall in Wood Ditton. About Norwich. Sandy fields, Norfolk, frequent. Mr. Woodward. (Very common about Wetherby. Sir T. Frankland. Corn-fields at Headington, Stanton Harcourt, &c. Oxon, Sibthorp. Sunderland Ballast Hills. Mr. Weighell. Near Cleadon and South Shields, Durham. Mr. Winch. Corn-fields on the coast of Angus. Mr. G. Don. Hook. Scot. A. July. *E.*)

S. ACAU'LIS. (Depressed: petals slightly notched, crowned: leaves linear, fringed at the base: peduncle solitary, single-flowered: calyx smooth. *E.*)

Dicks. H. S.—(*E. Bot.* 1081. *E.*)—*Lightf.* 12. at p. 221—*Fl. Dan.* 21—*Dill. Elth.* 167. 206—*Allion.* 79. 1—*Pona. Ap. Clus.* ii. 341. 2—*Ger. Em.* 593. 8—*Barr.* 380—*Park.* 639. 10—*J. B.* iii. 768—*Pet.* 56. 4.

Forms a thick turf. *Leaves* awl-shaped, smooth, but the edges beset with hooked teeth pointing downwards. *Flowers* single, bright purple. *Fruit-stalks* sometimes not half an inch high, but lengthening as the fruit advances to maturity, to one or two inches. *Petals* inversely heart-shaped, with two small teeth forming the crown. *Capsule* as long again as the calyx, smooth, shining, tinged with purple. *Woodw.* (Smith well observes that the term *stemless* is not strictly applicable to this plant, but rather alludes to its appearance at first sight. *E.*)

MOSS CAMPION. Mountains of Carnarvonshire, near Llanberris; Dartmoor, Devonshire; Isles of Mull, Rum, and Skye. Ben Lomond. Light-foot, (sometimes with a white flower. Mr. Murray, in Hook. Scot. *E.*) Malghyrdy and Ben Vourlock. Mr. Brown. (On Dove Crags, on Fairfield, and on Ben Lawers and Ben y Gloe, Mr. Winch. Calcareous mountains of Leitrim and Sligo. Mr. Murphy. *E.*) " P. May—June.*

STELLARIA.† *Cal.* five leaves, expanding: *Petals* five, mostly divided to the base: *Caps.* one cell: *Seeds* many.

S. NEM'ORUM. Lower-leaves heart-shaped, on leaf-stalks; (upper ovate, sessile: *E.*) panicle with forked fruit-stalks.

E. Bot. 92—*Kniph.* 10—*Fl. Dan.* 271—*H. Ox.* v. 23. 2—*Park.* 762. 1—*Col. Ecphr.* 240. 2.

* (This pretty little plant, in itself of humble habit, aspires to the most lofty stations, being abundant on the Alps of Switzerland, at an elevation of from seven to eight thousand feet above the level of the sea. It is said to have been the last phenogamous plant observed by M. de Saussure during his ascent of Mont Blanc, in 1787. *E.*)

† (From *stella*, a star; descriptive of the star-like, or radiated appearance of the blossom. *E.*)

From five to twelve inches high. *Stems* weak and brittle. Whole *plant* hairy. *Leaves* (large, pale green, tender; E.) underneath hairy, only on the veins and mid-rib. *Fruit-stalks*, the lateral ones solitary, the terminal ones forming a kind of leafy panicle, widely apart and rather turned down after flowering. *Flowers* white. *Styles* three, but in *Cerastium aquaticum* always five, so that, how much soever they may resemble each other in general habit, they cannot well be mistaken.

(WOOD STITCHWORT. BROAD-LEAVED STITCHWORT. E.) Woods, moist hedges, and banks of rivers, in the northern counties. By Caster-ton Mill, near Kirkby Lonsdale, Westmoreland. Smith. Near Kendal. Mr. Gough. Baydales, near Darlington. Mr. Robson. (Shady woods near Stockport, Cheshire. Mr. G. Holme. Cooms Wood, and Dunmal-let, Cumberland. Hutchinson. By Aspatria Mill, Cumberland. Rev. J. Dodd, in Bot. Guide. Beamish and Ravensworth Woods, Durham; and Banks of the Tyne, between Lemmington and Newburn. Mr. Winch. Banks of the north and south Esk. Maughan. Grev. Edin. E.) P. June.

S. HOLOS'TEA. Leaves spear-shaped, finely serrated: (petals inversely heart-shaped: calyx without ribs. E.)

Dicks. H. S.—(E. Bot. 511. E.)—Curt.—Kniph. 10—Walc.—Mill. Ill.—Fuchs. 136—J. B. iii. 361. 2—Trag. 329—Dod. 563—Lob. Obs. 26. 2—Ger. Em. 47—Park. 1325—Pet. 58. 1—Ger. 43. 1.

(*Stems* about two feet high, square, leafy, angles rough in the upper part. E.) *Leaves* strap-spear-shaped, (two or three inches long, glaucous. E.) in pairs, at the joints of the stem, sessile; the edges rolled inwards, set with fine prickles; mid-rib underneath beset with small prickles; above smooth, with a hollow groove running lengthwise along the middle. *Flowers* white, large. (Petals cloven only half way down. E.)

GREATER STITCHWORT. (Irish: *Fluigh*. Welsh: *Tafod yr edn mwyaf*. E.) Hedges and thickets, common. P. April—May.*

S. ME'DIA. (Leaves ovate: stems procumbent, with a hairy line on one side, alternate between each joint: stamens five to ten. E.)

(E. Bot. 537. E.)—Fl. Dan. 525. and 438—Curt.—Sheldr. 9—Walc. Dod. 20. 2—Lob. Obs. 245. 3—Ger. Em. 611. 2—Park. 760—H. Oz. v. 23. 4—Blackw. 164—Fuchs. 21—J. B. iii. 6. 363—Trag. 385—Lonic. i. 167. 1 and 2—Ger. 488. 2. and 489. •

(*Stem* thickest upwards, smooth, cylindrical, except a hairy ridge on one, rarely on two sides. *Leaves* pale green, on broad, channelled stalks below, sessile above. *Peduncles* single-flowered, hairy, horizontal, or slightly deflexed after flowering. *Petals* deeply bifid, small, white, shrivelling. *Stam.* glandular at the base. *Styles* after flowering reflexed. E.) This very common plant, which grows almost in all situations, from damp and almost boggy woods to the driest gravel walks in gardens, is consequently subject to great variations in its appearance. Those who have only seen it in its usual state as garden *Chickweed*, would hardly know it again in woods, where it sometimes exceeds half a yard in height, and has leaves near two inches long, and more than one broad; resembling in its

* (The flowers of this species are particularly attractive to a yellow underwinged moth which is often seen hovering over them. *Deilephila flavescens* feeds on both petals and stamens; and *Mordella* will open the anthers with the securiform joints of their palpi to get at the pollen. Kirby and Spence. Ornamental in spring when intermixed with other early flowers. E.)

habit *Stellaria nemorum*, or *Cerastium aquaticum*; distinguishable however from the latter by the number of pistils, and from the former by the woolly or hairy ridge extending along the stem.

The great uncertainty in the number of *stamens* (three, five, or ten, E.) occasions some difficulty to the young Botanist. In its truly wild state, in damp woods and hedge bottoms with a northern aspect, whatever be its size, it has almost always ten stamens. In dryer soils and more sunny exposures the stamens are usually five or three; and this is also generally the case in gardens, though sometimes flowers are found with only one or two. The *calyx* in all these different states is sometimes smooth, sometimes hairy. The other parts of fructification are very constant, and the capsule opening with six valves, compels us to consider it a species of *Stellaria* rather than an *Alsine*.

Flowers upright, and open from about nine in the morning to noon; but rain sometimes prevents their expanding. After rain they become pendent, but in the course of a few days rise again.

(COMMON STITCHWORT OR CHICKWEED. Welsh: *Gwlydd y cywion*; *Tafod yr edn canolig*. E.) *Alsine media*. Linn. *A. media*, pentastemon, (five-stamened,) Fl. Dan. 525; With. Ed. ii. 323. *A. media* decastemon, (ten-stamened,) Fl. Dan. 438. With. 324. (Abundant every where, both in cultivated and waste ground, by road sides, &c. E.)

A. March—Oct.*

* This species affords a notable instance of what is called the *Sleep of Plants*;—for every night the leaves approach in pairs, so as to include within their upper surfaces the tender rudiments of the new shoots; and the uppermost pair but one, at the end of the stalk, are furnished with longer leaf-stalks than the others, so that they can close upon the terminal pair, and protect the end of the branch. Linn. (Numerous are the plants which, more or less, close their petals in rainy weather, or at night-fall, but the sensibilities of the present species are still more remarkable, though probably intended for the same purpose, that of securing from injury the delicate organs of fructification.

“Averse from evening’s chilly breeze,
How many close their silken leaves,
To save the embryo flowers;
As if, ambitious of a name,
They sought to spread around their fame,
And bade the infant buds proclaim
The parent’s valued powers.” S. H.

As by the term *Vigiliæ Plantarum*, (the vigils of plants), Botanists comprehend the precise time of the day in which certain flowers expand or close; so Linnaeus distinguishes by the general name of *solar*, (*Flores Solares*), all those flowers which observe a determinate time in opening and shutting: and these are again divided into three several kinds, viz. *Equinoctial Flowers*, (*Flores Equinoctiales*), such as open and shut in all seasons at a certain hour: *Tropical Flowers*, (*Flores Tropici*), those whose hour is not fixed at all seasons, but accelerated or retarded with the increasing or diminishing length of the day: and *Meteorous Flowers*, (*Flores Meteorici*), whose hour of expansion depends upon the dry or humid state of the air, and the greater or less pressure of the atmosphere. Upon these curious sensibilities has been constructed the *Horologium Floræ*, described elsewhere. E.) The young shoots and leaves, when boiled, can hardly be distinguished from spring spinach, and are equally wholesome. Swine are extremely fond of this plant; cows and horses eat it; sheep are indifferent to it; goats refuse it. (*Phalena Villica*, and other caterpillars feed upon it. In gardens and other cultivated lands, it often proves a most troublesome underling weed, which should be eradicated by persevering attention. The vegetative process of the Chickweed is not interrupted even during the severity of winter. It produces ripe seeds within eight weeks from the period of their being sown, when the inverted capsules give their contents to the winds, or drop them immediately on the earth. It is a grateful food to small birds and young chickens, whose sustenance is secured by the exuberant

S. GRAMIN'EA. Leaves strap-spear-shaped, very entire: (panicle terminal, spreading: calyx three-ribbed. E.)

(E. Bot. 803. E.)—Kniph. 10—Gmel. iv. 61. 2—Pet. 58. 3—Ger. 43. 2—J. B. iii. 361. 3.

(Smaller and more slender than *S. holostea*, one to two feet high, not glaucous. Flowers small. E.) Petals as long as the cup, white, (deeply cloven into linear segments. E.)

LESSER STITCHWORT. (Welsh: *Tafod yr edn lleiaf*. E.) Meadows, pastures, hedge banks, and thickets. P. May.

(S. SCA'PIGERA. Stem shorter than the fruit-stalks: leaves strap-spear-shaped, rough-edged: calyx three-nerved, nearly as long as the petals.

E. Bot. 1269.

Stem very short, hairy, thickly set with leaves. Leaves not glaucous, opposite, strap-spear-shaped, sharp pointed, smooth, one-fibred, not three-fibred; nerve very thick at the base, towards the point scarcely perceptible, border rough and slightly scalloped. Fruit-stalks very numerous, axillary, upright, far exceeding the stem, generally two inches long, four cornered, smooth, often undivided. Blossoms white, inconspicuous. Leaflets of the calyx three-fibred, sharp-pointed, membranaceous at the edge, almost as long as the petals. Anthers red. The leaves turn red in decay, and remain long on the stem. The crowded leaves, short stems, and very numerous long flower-stalks, at once distinguish this species. Sm.

MANY-STALKED STITCHWORT. *S. scapigera*. Willd. By the sides of rivers in Scotland. In Perthshire and about Loch Nevis, Inverness-shire. Mr. G. Don. Fl. Brit. P. June. E.)

S. GLAU'CA. Leaves spear-strap-shaped, entire, glaucous, in cross pairs: petals half as long again as the three-ribbed calyx.

(E. Bot. 825. E.)—Pet. 58. 2.

(Corners of the stem roughish. Leaves strap-shaped, acute, very entire; but when magnified the edges appear set with minute teeth, though not rough to the touch. Panicle lateral. Petals not quite twice the length of the calyx. Stem and leaves appear under a lens sprinkled with numerous, minute, white dots, and its glaucous colour is owing to this circumstance. Br. E.)

(Of intermediate size between *S. holostea* and *graminea*, with much of the habit of the former. E.)

Differs from *S. graminea*, not only in having shorter and stiffer stems, but in the leaves being more rigid, glaucous, and acute, and the flowers larger. Ray Syn. 347. 3. Flowers white.

(GLAU'COUS MARSH STITCHWORT. Welsh: *Tafod yr edn llwydlas*. *S. media*. Sibth. (but this trivial name being rendered objectionable by

tant produce of no less than seven or eight successive crops in the year, while their depredations effectually counterbalance the inconvenience which such amazing powers of reproduction might otherwise occasion; and thus does nature by a provision the most apposite maintain the equilibrium of all things, both small and great. E.)

the admission of *Alsine media* into the present genus, our Author substituted *glauca*, which has been followed by Smith, Hooker, Greville, and other Botanists. E.) *S. graminea* β , Linn. Huds. (In bogs and marshy places. E.) On ditch banks in the Isle of Ely, plentiful. Ray. Otmore, Oxfordshire. Sibthorp. About Falmouth. (Marshy ground on the top of Braid Hill, near Edinburgh. Mr. Brown. On St. Faith's Newton bogs, near Norwich. Sir J. E. Smith. Marshes near Beverley. Col. Macfell. Common near Copgrove, Yorkshire. Rev. J. Dalton. Side of clear streams near Tunbridge Wells. Forster; and various other parts of Sussex; Battersea fields, near Nine Elms. Sowerby. Bot. Guide. In ditches in Cors ddygai, below Berw, Anglesey. Welsh Bot. Lochend, and Duddingston Loch, Edinburgh. Mr. Maughan. Hook. Scot. E.) P. June—July.

S. ULIGINOSA. (Leaves elliptic-lanceolate, entire, with a callous tip: flowers irregularly paniced, lateral or terminal: petals shorter than the calyx. Sm. E.)

(Gurt. N. E.—E. Bot. 1074. E.)—Pet. 58. 4—Ger. 490. 9—Ger. Em. 613. 8—H. Oz. v. 23. 8—J. B. iii. 365. 2.

Stems several, from two or twelve inches high, square, weak, and sometimes creeping at the base, above upright, extending beyond the panicles, but little branched; branches upright. *Leaves* smooth, except at the base, sessile or tapering down into short leaf-stalks, upright. *Panicles* pointing one way, sessile, upright, generally two on each stem; mostly consisting of three primary branches, the outermost bearing a single flower; the other two, in the more luxuriant plants, dividing into forks, with a fruit-stalk bearing a single flower at each fork; the shorter as long again as the single fruit-stalk; and the third nearly as long again as the second. *Flower-scales* two at each fork of the panicle. *Petals* white; segments strap-shaped. *Styles* sometimes four or five. St. (Plant smooth and pale; leaves not an inch long. The peculiar inflorescence, the short petals, and the form and structure of the leaves, mark *S. uliginosa* with sufficient precision. E. Bot. E.)

BOG OR FOUNTAIN STITCHWORT. (Welsh: *Tafod yr edn y gors*. E.) *S. uliginosa*. Schreb. *S. Dilleniana*. Leers. *S. graminea* γ , Linn. Huds. Lightf. β , *Alsine longifolia uliginosis proveniens locis*. J. B. iii. 365. R. Syn. 347. *Alsine fontana*. Ger. 490. Em. 613. *Alsine aquatica media*. Bauh. Pin. 251. *Alsine*. Hall. n. 882. β . Sides of springs, rivulets, ditches, and boggy meadows. Rivulets on the side of Malvern Hills, and on the side of the hill at the west end of Powick Ham, near Worcester. Dr. Stokes. Moist grounds, near Leeds. Mr. Wood. Marshes in Cornwall. Mr. Stackhouse. Hockley Pool-dam, near Birmingham. (Banks of the Erme near Ivy Bridge, Devon. Rev. Pike Jones. Ditch on the west side of the Common, and at the side of a pit in one of the Packmore fields, Warwick. Perry. E.) A. June.

S. CERASTOIDES. (Leaves elliptic-oblong, smooth: fruit-stalks mostly two-flowered, downy: calyx-leaves with a single downy nerve. E.)

Dicks. H. S.—Sm. Pl. Ic. 15—(E. Bot. 911. E.)—Fl. Dan. 92—Gunn. ii. 62—Jacq. Coll. i. 19.

Stems trailing, three or four inches long, flowering branches ascending, naked, cylindrical, smooth. *Leaves* sessile, half an inch broad, opposite egg-oblong, blunt, very smooth. *Flowers* terminal, one, two, or three

on long, glutinous, fruit-stalks, the lateral ones with a pair of floral-leaves. *Petals* white, cloven scarcely half way down, nearly twice the length of the calyx. (It is certainly a *Cerastium*, differing only in the number of styles, a difference by no means constant. I have found it with four and five, but more frequently with three. Its resemblance to *C. arvense*, is very striking. Br. E.)

(ALPINE STITCHWORT. E.) Highland mountains. Found by Mr. Dickson on Ben Nevis, Scotland. (On the side of Ben Bourde, a high mountain seven miles from Invercauld. Mr. Brown. Aug. E.)

ARENARIA.* *Cal.* five-leaves, expanding: *Petals* five, entire: *Caps.* one-celled, many-seeded.

(1) *Stipulae* none.

A. PEPLIOIDES. Leaves egg-shaped, acute, fleshy: (calyx obtuse, without ribs. E.)

Dicks. H. S.—E. Bot. 189—*Fl. Dan.*—624—*Pet.* 65. 9—*Ger. Em.* 622. 1. (Root creeping. *Stems* decumbent at the base, angular. *Cal.* sometimes purplish. *Glands* ten, alternate with the stamens. Of a different habit to other *Arenariae*. E.) *Leaves* egg-spear-shaped, half an inch long, somewhat embracing the stem, smooth, succulent, the points turned back. *Flowers* white, (small, axillary, one, two, or three together. E.)

SEA SANDWORT. (Welsh: *Tywodwlydd arfor*. E.) Sea shore frequent, and salt water marshes. P. June—July.†

A. TRINERVIS. Leaves egg-shaped, three-fibred, pointed, on leaf-stalks, (calyx obscurely three-ribbed, with a rough keel. E.)

Curt. 272—(*E. Bot.* 1483. E.)—*Walc.—Fl. Dan.* 429—*J. B.* 364. 1—*Pet.* 59. 1.

Stems reclining, downy, cylindrical, (a foot high, E.) several growing together in tufts. *Branches* mostly from the upper side. *Leaves* beset with very short fine hairs, and fringed with fine bristles; the lower nearly heart-shaped, on flat leaf-stalks; the upper spear-egg-shaped, nearly sessile. *Petals* expanding, half as long as the calyx; white. *Stamens* as long as the cup; every other shorter. *Styles* sometimes two or four. *Summits* reflexed, woolly. Has greatly the habit of *Stellaria media*.

PLANTAIN-LEAVED SANDWORT. (Welsh: *Tywodwlydd llyriadd-ddail*. E.) Woods and wet hedges. A. May—July.

A. SERPYLLIFOLIA. (Leaves egg-shaped, acute, sessile, scabrous: calyx hairy; three outermost of its leaves five-ribbed. E.)

Fl. Dan. 977—*Curt.* 268—(*E. Bot.* 923. E.)—*Ger.* 488. 3—*Dod.* 30. 1—*Lob. Obs.* 246. 2—*Ger. Em.* 612. 3—*Park.* 1259. 3—*Pet.* 59. 2.

(Leaves of the calyx ovate, acute, hairy, with a white, membranous edge; the three outermost furnished with five ribs, the two inner ones with only three. The number of the ribs of the calyx is of great importance for discriminating the species of this genus, as in *Linum*. E. Bot. *Stems* spread-

* (From the arid, sandy places, in which these plants are produced. E.)

† (In Yorkshire frequently used as a pickle. Mr. Travis. E.)

ing, forked upwards, forming a little bushy herb, but a few inches high. *Leaves* stiffish, somewhat woolly, dotted. *Flowers* white, small, solitary. E.)

THYME-LEAVED SANDWORT. (Welsh: *Tywodwlydd gryddail*. E.) Roofs, walls, sandy and very dry places. A. May—July.

A. MEDIA. Leaves strap-awl-shaped, six in a whorl: stem upright: capsules twice the length of the calyx.

Ephem. Act. Nat. Cur. 5. s. 6. t. 4. (Reich. Gmel.)

Lower leaves expanding, reflexed, upper one about the length of the joints. *Stamens* four, five, or seven. *Petals* purple. *Seeds* flat, between half heart-shaped and kidney-shaped, the circular edge downy, with an elevated rounded border, the straight edge plain, dark brown; some compassed with a membranous border, deeper than half the breadth of the seed, white, with radiated scores, toothed at the edge. So remarkable a difference in structure one might have expected to afford a mark of specific distinction, but though generally the two kinds of seeds are found on different plants, yet they are sometimes seen in the same seed-vessel. St. *Spergula maritima flore parvo cæruleo, semine vario*. Ray Syn. 351. according to Huds.

Pastures on the sea coast. Hudson. With *A. marina* on Shell-coast in the Isle of Sheppey. Ray. A. June—Sept.

It is not clear that this plant of Ray and Hudson is the *A. media* of Linn. It may be only a var. of *A. marina*. (A further examination of specimens and figures induces me to suspect it may prove *A. marina* β, Fl. Brit. instead of the first variety as Smith seems to imagine. E.)

A. VER'NA. Leaves awl-shaped, bluntish: stems panicked: (petals obovate, longer than the remotely three-nerved calyx. E.)

(*E. Bot.* 512. E.)—*Jacq. Austr.* 404—*Pet.* 59. 4—*Herm. Par.* 12.

(*Stems* numerous, tufted, three or four inches high, slightly hairy and viscid. *Flowers* white, star-like, with red anthers. *Caps.* cylindrical, longer than the calyx. E.)

(On the authority of Sir J. E. Smith, (who assures us that the Linnean *A. juniperina* and *laricifolia* have no pretensions to be considered British plants,) those inserted as such in former editions are now referred to the present species. E.)

(VERNAL SANDWORT. E.) Mountainous situations about Settle, Kendal, and Llanberis. Matlock, Derbyshire, and in the northern counties. Mr. Woodward. Road side between Holywell and St. Asaph. Mr. Wood. Blackford and Braid Hills, and on Craig Lochart, all near Edinburgh. Mr. Brown. Snowdon and Holywell; Mr. Griffith: who, however, describes the plant of the latter station as "more hairy and of a different habit, possibly distinct." (Arthur's Seat, Edinburgh. Mr. Winch: who has also remarked it on the Weardale and Teesdale Moors, at an elevation of 1,000 to 2,000 feet, and particularly on the rubbish of old lead mines. Magilligan, Derry. E. Murphy, Esq. E.)

P. May—Aug.*

* (It has been remarked by the Rev. J. Pike Jones in his 'Botanical Tour,' that this plant has the peculiar power of resisting the deleterious effects of the metallic oxides which usually pervade the refuse heaps thrown out from mines, and is found to flourish in such situations, usually destructive to vegetable life. E.)

- (A. RUBELLA. Leaves awl-shaped, bluntish: stems single-flowered: calyx-leaves with three equal ribs: longer than the petals.

Hook. Fl. Lond. 203—Wahl. Lapp. t. 6.

Very nearly allied to *A. verna*. Stem about an inch high, branched from the base, branches numerous, thickly tufted, clothed at the base with the remains of old leaves, leafy above. Leaves green, rarely tinged with purple, opposite, linear-subulate, two or three lines long, blunt, rather convex behind, three-nerved, swollen at the base, membranous, connate. Petals between elliptic and lanceolate, rather acute, white, somewhat shorter than the calyx, sometimes deficient. Stamens ten, shorter than the corolla. Anthers with two almost globose cells, pale yellow. Capsule with calyx persistent, a little shorter than it.

SMALL ARCTIC SANDWORT. *A. rubella*. Hook. *Alsine rubella*. Wahl. Inhabits only high northern regions, several thousand feet above the level of the sea. It has recently been detected in the Breadalbane range of mountains, viz. upon Craigalleach, by Dr. Greville; upon Macgreadha, by Mr. Earle; and on Ben Lawers by Mr. Murray, in company with Prof. Hooker. P. July. E.)

- A. TENUIFOLIA. Leaves awl-shaped, pointed: stems paniced: capsules upright: petals much shorter than the acuminate, three-nerved calyx, spear-shaped. E.)

Dicks. H. S.—E. Bot. 219—Vaill. 3. 1—Fl. Dan. 389—Seguier, i. 6. 2—J. B. iii. 364. 3—Pet. 59. 3.

(Plant slender, glabrous, though sometimes hairy or viscid. E.) Leaves awl-shaped, connected at the base. Calyx leaves greatly tapering, or rather awned, with green lines underneath. Petals broad-spear-shaped, half as short again as the calyx. Linn. Flowers white, only one upon a fruit-stalk, but these so numerous as to resemble a panicle. Anthers red. E. Bot. The petals being shorter than the calyx, distinguishes this from the preceding, and from the two subsequent species. It is also much taller and much more branched than either of them, often attaining the height of eight or nine inches.

FINE-LEAVED SANDWORT. (Welsh: *Tywdwllydd meindwlf*. E.) Sandy meadows and pastures. Corn-fields on the borders of Triplow Heath; Gogmagog Hills, Cambridgeshire. Near Deptford; Cornbury Quarry, near Charlbury, Oxfordshire. On a wall in Battersea. Near Cley, Norfolk. Mr. Crowe. Near Bury. Mr. Woodward. Malvern Hill, Worcestershire. Mr. Ballard. (On rocks in Bodowen park, Anglesey. Welsh Bot. E.) A. June—July

- (A. FASTIGIATA. Leaves awl-shaped: stem erect: straight, densely corymbose: petals very short: lateral ribs of the calyx dilated.

E. Bot. 1744—Jacq. Austr. 182—Hall. Hist. t. 17. f. 2—Scop. Carn. t. 27

Root small, zigzag. Stems either solitary or numerous, four or five inches high, alternately branched, leafy, cylindrical, nearly smooth, often purplish. Leaves very slender, smooth, erect, permanent; dilated, combined and three-ribbed at the base. Fl. in forked, level-topped, crowded panicles. Calyx-leaves all nearly equal, smooth, taper-pointed, remarkable for the great breadth of their ivory-like lateral ribs. Pet. much shorter than the calyx, white, obtuse. Stam. ten, rather longer than the petals. Caps. oblong, of three valves. Seeds compressed, beautifully toothed like a wheel, each on a long slender stalk.

LEVEL-TOPPED SANDWORT. *A. fasciculata*. Jacq. not of Linn. On rocks on the mountains of Angus-shire; and in Fifeshire. Mr. G. Don.

A. June. Sm. Eng. Fl. E.)

(*A. CILIA'TA*. Leaves spatulate, roughish, fringed at the base: stems numerous, branched, procumbent, downy: flowers terminal, solitary: calyx-leaves with five or seven ribs.

E. Bot. 1745—*Jacq. Coll.* 16. 2—*Fl. Dan.* 346—*Hall. Hist.* 17. 3.

Stems leafy, cylindrical, downy, about a finger's length, composing dense, bright green tufts. *Leaves* in pairs, crossing each other, recurved, obtuse, single-ribbed, somewhat fleshy, tapering at the base. *Fl.* large, conspicuous, on long stalks, clothed with short recurved hoary pubescence. *Cal. leaves* ovate, acute, concave, hairy, green, with a strong keel; margin membranous. *Pet.* brilliant white, spreading, longer than the calyx. *Caps.* short, ovate, of six valves.

A. multicaulis of Linnaeus appears to be the same plant in a less luxuriant state. By culture the *stems* become forked, bearing three, four, or five flowers.

FRINGED SANDWORT. *A. ciliata*. Linn. On mountains in Ireland. Upon limestone cliffs of a high mountain adjoining to Ben Bulbin, Sligo. Mr. J. T. Mackay.

P. Aug.—Sept. Sm. Eng. Fl. E.)

(2) *Stipulae membranous.*

A. MARI'NA. Leaves semi-cylindrical, fleshy, awnless, opposite, as long as the joints: stems prostrate: capsules longer than the calyx: (seeds bordered, smooth. E.)

(*E. Bot.* 958. E.)—*Fl. Dan.* 740—*Pet.* 59. 7—*H. Or.* v. 23. 15.

(The figure in *E. Bot.* agrees well with the specimens in our Herbarium, called *A. marina*, which we accordingly refer as the same plant as *A. marina*. *Fl. Brit.* though Smith seems to apprehend his plant must be *A. media* of With. E.) *Leaves* frequently longer than the joints. *Woodw.* *Stamens* variable in number. *Relh.* *Flowers* purplish. (*Stipulae* membranous, sheathing. *Stems* four to six or eight inches long, not entirely prostrate. E.)

(SEA SPURGEY OR SANDWORT. Welsh; *Tywodwlydd y morgreigiau*. *A. marina*. *Fl. Brit.* and *E. Bot.* *A. rubra* β. Linn. *Huds. Lightf.* E.) Salt marshes, and on the sea coast, common. In a salt marsh near Shirley Wich, Staffordshire. *Stokes.* (Defford Common, (on which are also saline springs), between Pershore and Upton. *Rufford*, in *Purt.* E.)

P. May—Oct.*

A. RU'BRA. Leaves thread-shaped, opposite, but half the length of the joints of the stem: stems prostrate: calyx as long as the capsule: (seeds compressed, angular, roughish. E.)

(*E. Bot.* 852. E.)—*Kniph.* 11—*J. B.* iii. 722. 3—*Pet.* 59. 8.

Stems smooth, (much branched, spreading. E.) *Leaves* flattened, smooth, terminated by a little sharp point, (slightly hoary or glaucous. *Stipulae*

* It is succulent, very much resembles samphire, and considerable quantities of it are picked and sold for that plant. *Mr. Watt.*

in pairs, membranous, sheathing the stem. E.) *Calyx*, leaves spear-shaped, concave, membranous at the edge, viscid, and beset with minute hairs with globular heads. *Summits* woolly. *Petals* purple, (opening only in sunny weather. E.)

PURPLE SPURGEY OR SANDWORT. (Welsh: *Tywodwlydd glasrudd*. E.)
Sandy meadows and corn-fields. A. June—Aug.

CHERLERIA.* *Cal.* five leaves: *Nectaries* five, cloven, resembling petals: *Anthers*, every other barren: *Caps.* one-celled, three-valved, three-seeded.

C. SEDOIDES.

Dicks. H. S.—Jacq. Austr. 284—(E. Bot. 1212. E.)—Hall. Opusc. 1. 3. at p. 300—Hall. 21. 1. at ii. p. 114—Penn. Voy. 33—Pluk. 42. 8—Park. 737. 11—H. Ox. xii. 6. 14.

(Densely tufted; *stems* two or three inches high. *Flowers* solitary, yellowish green, each *flower-stalk* bearing a pair of small *bracteas*. Prof. Hooker considers the glands withinside five of the *stamens* as minute petals. E.) *Leaves* opposite, strap-shaped, rough at the edge, connected at the base into a kind of sheath. When the leaves fall off, the sheath and keel of the leaves remain, clothing the stem, whence it has an affinity to the Giliflower tribe. Linn.

MOSS CYPHEL. Highland mountains, near their summits. On Ben Teskerney and Craig Cailleach; and in immense quantities on Ben Lawers, but only at truly alpine elevations. Mr. Brown. (On Ben Lomond, and Ben y Gloe. Mr. Winch. E.) P. July—Aug.

PENTAGYNIA.

COTYLEDON.† *Calyx* four or five-cleft: *Bloss.* one petal: *Nectariferous scales* five, at the base of the five *capsules*.

C. UMBILICUS. *Leaves* target or kidney-shaped, scalloped: *stem* clustered: *flowers* pendent: *bracteas* entire.

(Hook. Fl. Lond. 184—E. Bot. 325. E.)—Chus. ii. 63. 1—Blackw. 263—Dod. 131. 1—Lqb. Obs. 209. 3—Ger. Em. 328. 1—Park. 740. 1—Ger. 423. 1—J. B. iii. 684. 1—Matth. 1122.

Root oblong, sometimes the size of a nutmeg, flat at bottom, covered with small fibres. *Stackh.* Whole *plant* succulent. *Leaves* thick, fleshy, circular, with central leaf-stalks, concave on the upper surface, with a hollow dimple nearly in the centre, just opposite to the insertion of the leaf-stalk underneath. *Stem-leaves* resembling the root-leaves, but not so exactly circular, and the leaf-stalk not fixed so nearly in the centre. *Stem* upright, (simple or branched, six to twelve inches high, E.) clothed with a long spike-like bunch of pendent flowers, but in the smaller plants the flowers are sometimes upright or horizontal. *Floral-leaves* strap-spear-shaped, entire. *Bloss.* tubular, five-sided, pale greenish yellow.

* (In honour of John Henry CHERLER, assistant to the celebrated Botanist, John Baubin, 1619. E.)

† (From *κορυμβώδης*, a cavity; so called by Dioscorides and Pliny, because its leaf is of a hollow, and somewhat semi-orbicular form. E.)

NAVELWORT. KIDNEYWORT. WALL PENNYWORT. (Irish: *Cornan Caisil*. Welsh: *Cronoddaidd*; *Deilen-gron*. E.) *C. umbilicus* β. Linn. Old walls, roofs, and moist rocks, (and sometimes on hedge banks. E.) Troutbeck, Westmoreland; old walls at Peterborough; and Thorpe, between Peterborough and Wandsford. Mr. Woodward. Walls, Cornwall. Mr. Watt. Plentifully throughout Carnarvonshire and Merionethshire. Mr. Wood. Malvern Hill, Worcestershire. Mr. Ballard. (On old walls about Liverpool. Dr. Bostock and Mr. Shepherd. In Anglesey. Welsh Bot. On walls at Guy's Cliff; in the Old Pound at Coton End, Warwick. Perry. On rocks at Tre-Madoc, Wales. Miss Roberts. Winchelsea. East Gate. Mr. G. E. Smith. On walls at Quatford and Rowton, Salop; and Maxtock Priory, Warwickshire. Bree, in Purl. Drum-madon, west side of the Isle of Arran. Lightfoot. By the light-house of the little Cumbræ, on the Clyde. Dr. Brown, in Hook. Scot. On walls about Brislington, near Bristol. Remarkably luxuriant by the road side from Exeter ascending Haldon; spikes of flowers in some specimens attaining nearly two feet in length, having six to ten lateral shoots, and occasionally tinged with red: leaves not proportionally large.* E.) P. June—Oct.†

(The Haldon plants brought to mind *C. lutea*, of Hudson; (*C. umbilicus* α, Linn.), said to have been found in the West Riding of Yorkshire, also in Somersetshire; but without any particular station having been reported. If the representation in E. Bot. 1522, (from a garden specimen), be correct, the densely clustered and acuminate spike of flowers in *C. lutea*, is dissimilar. E.)

SEDUM.† *Cal.* five-cleft: *Bloss.* none, or five petals: *Nectariferous scales* five, at the base of the five *caps.*, which are distinct like a legumen.

(1) *Leaves flat.*

3. TELEPHIUM. Leaves flattish, serrated: corymb leafy: stem upright.

Stem spotted with red, about two feet high. *Leaves* large, with a decided mid-rib. E.)

Var. 1. *Fl. alb.* White flowered.

E. Bot. 1319. E.)—*Kniph.* 4—*Ludw.* 200—*Fuchs.* 800—*J. B.* iii. 681—*Matth.* 636—*Clus.* ii. 66. 2—*Dod.* 130. 2—*Lob. Obs.* 211—*Ger. Em.* 519. 2—*Park.* 726. 2—*H. Ox.* xii. 10. row 1. 1—*Ger.* 416. 2—*Blackw.* 191. 2.

More rarely met with than the following.

Var. 2. *Fl. purp.* Purple-flowered.

* (The gigantic stature of this plant, and various others, especially of the succulent tribe, strongly evince the genial influence of the mild and humid atmosphere of South Devon on vegetation. The peculiar, and not inelegant, appearance of *Cotyledon* renders it a fit subject for rock-work. It may be readily propagated, especially on limestone, either by seed or cuttings of its branches. E.)

† (Sometimes called *White Rot*, as *Drosera rotundifolia* is *Red Rot*, from a popular idea that feeding on these plants induces a disease called the Rot, in sheep: but the fact does not appear to have been proved. The like prejudice exists against other bog plants, but might, we apprehend, be more reasonably entertained against the bog itself, or certain noxious insects generated therein. E.)

‡ (Conjectured a seedling in *rupes*, growing close on rocks, E.)

Curt. 210—*Fl. Dan.* 686—*Fuchs.* 801—*Kniph.* 4—*Clus.* ii. 66. 1—*Ger.* 417. 1—*H. Ox.* xii. 10. row 1 2—*Blackw.* 191—*Lonic.* ii. 24. 2—*Trag.* 373.

ORPINE. LIVE-LONG. (Welsh: *Bywlys Llydanddail*; *Berwr Taliesin*. E.) Pastures and hedges. Sandy fields, Suffolk, frequent. Mr. Woodward. Near Ashbourne. Mr. Whately. Fields about Robinson's End; Malvern Chase. Mr. Ballard. Many hedges about Manchester. Mr. Caley. Crevices of rocks on Haughman Hill, near Salop. Mr. Aikin. (On stone fences, and on Wallow Crags near Keswick; and road side near Urpeth, Durham. Mr. Winch. Wick Cliffs, Gloucestershire. Rev. I. H. Ellicombe. Between Hythe and Lenham, abundant. Mr. G. E. Smith. Hedges near Hennock, Devon. Rev. J. P. Jones. In Anglesey. Welsh Bot. Hedge-banks near Roslin. Mr. Maughan. *Grev. Edin.* In a pasture by the mount at Mr. Pearson's, Tettenhall, Staffordshire. E.)
P. Aug.*

(2) *Leaves roundish, nearly cylindrical.*

S. VILLOSUM. (Leaves alternate, linear, E.) flattened, with the leaf-stalks hairy; stem upright, somewhat branched at the base.

Fl. Dan. 24—(*E. Bot.* 394. E.)—*Clus.* ii. 59. 3—*Ger. Em.* 516. 1—*Park.* 734. 6—*H. Ox.* xii. 8. 48—*Pet.* 42. 7.

Stem smooth below, hairy and viscid above. Leaves fleshy, oblong, nearly flat above, hairy, the lower ones smooth. Fruit-stalks hairy, viscid, solitary. Calyx hairy. Woodw. Stem upright, from three to five inches high. Flowers flesh-coloured.

HAIRY STONECROP. Moist mountainous meadows and pastures. Hartside Hill, near Gamblesby, Cumberland. Ray. Hinkleham, near Settle; Carr End, Wensley Dale, Yorkshire. Curtis. Close by Weathercoat Cave, at the foot of Ingleborough. Mr. Woodward. A common plant on the banks of streams in Scotland, which run from moorish grounds. Dr. Hope. (Near Peebles, and in the Highlands frequent. Mr. Winch. Near Bootle, in the neighbourhood of Liverpool. Mr. James Roscoe. *Fl. Brit.* E.)
P. June—July.

S. ALBUM. Leaves oblong, blunt, nearly cylindrical, sessile, expanding: (panicle much branched. E.)

Curt.—(*E. Bot.* 1578. E.)—*Fl. Dan.* 66—*Blackw.* 428—*Allion.* 65. 2—*Ger.* 413. 2—*Clus.* ii. 59. 1—*Dod.* 129. 2—*Lob. Obs.* 205. 2—*Ger. Em.* 512. 2—*Park.* 734. 4—*H. Ox.* xii. 7. 23—*Fuchs.* 35—*Trag.* 578—*J. B.* iii. 690—*Walc.*—*Lonic.* i. 60. 1.

Stems (four or five inches high, E.) trailing, striking root; flowering branches upright, bearing a forked tuft of flowers with subdivided fruit-stalks. Leaves semi-cylindrical, flattened above, loose underneath at the base. Flowers white, with reddish streaks, and a general blush of red; the whole plant has sometimes a purplish tinge.

* A decoction of the leaves in milk is a forcible diuretic. It has been given with success to cure the hemorrhoids. Cows, goats, sheep, and swine eat it; horses refuse it. (The caterpillar of *Phalena alpicola* feeds on its leaves. The beauty of Orpine gains it admittance into gardens, where it often flourishes to a great size. So retentive of vitality is this *Live-long*, that fatted frames covered with it have been adopted as chimney boards, and if sprinkled with water once a week will continue in verdure for months. E.)

WHITE-FLOWERED STONECROP. *Sedum minus teretifol. alb.* R. Syn. p. 271. Walls and roofs. Walls at Peterborough. Mr. Woodward. Rocks above Great Malvern. Nash. Wick Cliffs. Mr. Swayne. (Mountains about Winandermere. Dr. Maton. Rydal. Rev. J. Dodd. At Stackpole Quay, Pembrokeshire, in abundance. Mr. Milne. Bot. Guide. On the Abbey Bridge, near Barnard Castle. Mr. E. Robson, in Winch. Guide. House-tops at Forfar, Glamis, &c. Mr. Arnott. Hook. Scot. M.)

P. June—July.

S. ACRE. (Leaves alternate, nearly egg-shaped, gibbous, spurred at the base: cyme of three branches, leafy. E.)

Curt.—(E. Bot. 839. E.)—Woodv. 231—Sheldr. 42—Fuchs. 36—J. B. iii. 694. 2—Trag. 379—Blackw. 232—Ger. 415—Clus. ii. 61. 1—Ger. Em. 517. 2—Park. 735. 7—H. Ox. xii. 6. row 3. 12—Pet. 42. 9—Dod. 129. 3—Lob. Obs. 205. 4—Park. 735. 8—Matth. 1119—Lonic. i. 59. 2.

Shoots club-shaped, closely tiled with leaves on every side. Flowers terminal, yellow. (Flowering stems three to six inches high, tufted, branched. Flowers not numerous. E.)

WALL PEPPER. (BITING STONECROP. Welsh: *Bywydog loeth*; *Papur y fagwyr.* E.) Walls, roofs, rocks, and dry pastures. P. June—July.*

S. SEXANGULA'RE. Leaves subternate, fleshy, somewhat egg-shaped, spurred at the base, sessile, nearly upright, tiled in six rows: (cyme of three branches, leafy. E.)

Curt. 225—(E. Bot. 1946. E.)

Agrees with *S. acre* in appearance, flowers, and situation, but differs in its leaves being, before blossoming, evidently tiled in six rows, and instead it having a biting, acrid taste, being insipid. Branches never so copious as to form a tuft. Flowers in each branch seldom more than three. Linn. Flowers yellow. Number of stamens, &c. uncertain, varying from eight to twelve. The rows of leaves most obvious in the young shoots.

INSIPID YELLOW STONECROP. Walls, roofs, and dry pastures. (On the walls of Old Sarum. Mr. D. Turner. E. Bot. Near Scarborough. Mr.

* Wall Pepper is very acrid. Applied externally it blisters. Taken inwardly it excites vomiting. In scorbutic cases, and quartan agues, it is an excellent medicine under proper management. This plant continues to grow when hung up by the root, which has been considered as a proof that it receives its nourishment principally from the air; but from some accurate experiments made by Mr. Gough of Kendal, and communicated to me, it appears that though the life of the plant be retained in such a situation for some weeks, it is at the expense of the juices which its succulent leaves had previously imbibed. At the end of three weeks, the plant suspended in June, before a window with a northern aspect, had lost about half its weight, though it had put out some fine fibres from the root, and had still life enough to enable it to turn to the light after having been purposely turned from it. After being kept in water for twenty four hours, it regained more than half of what it had lost. Mr. Gough therefore very justly considers the succulent leaves as reservoirs, which support it in dry weather, and are again replenished in rainy seasons, but does not admit the truth of common observation that it attracts its nourishment from the air more than other plants do. He used plants which had not flowered, because, after flowering, the leaves are apt to fall off. Goats eat it; cows, horses, sheep, and swine refuse it. (Spreading over the roofs of cottages, or the tops of walls, its golden blossoms exhibit a gay appearance; and mingled occasionally with the crimson or pearly constellations of its congeners, arrest the attention even of the superficial observer; while to the more scrutinizing eye of the scientific, each individual flower displays a skill, beauty, and contrivance, truly admirable. E.)

Travis. E.) Near Northfleet, Sheerness, and the Isle of Sheppey. Hudson. Side of Greenwich Park wall, near the west corner. Curtis. P. June—July.

S. ANGLICUM. (Leaves ovate, thick, mostly alternate, spurred at the base: cyme bifid. E.)

Fl. Dan. 82—E. Bot. 171—Ray 12. 2. at p. 326—Pet. 42. 10.

Root branching. Stem trailing, (two or three inches high, E.) cylindrical, leafy, smooth, branching, reddish. Branches alternate. Leaves tiled generally in three rows, somewhat pointed, flattish above, gibbous underneath, pulpy, naked. Tuft, branches somewhat bowed back. Flowers sessile, pointing one way. Blossom white, or purplish white. Capsules purplish. Huds. (Flowers conspicuous from their white star-like appearance and purple anthers; not always speckled with red. E.)

ENGLISH STONECROP. (Welsh: *Brywag y cerrig*; *Gwenith y brain*. E.)

S. rubens. Lightf. Rocks, roofs, walls, in Wales and the North of England. On all the coast of Suffolk. Mr. Woodward. Rocks between Dundee and Broughty Castle. Mr. Brown. On rocks of the Devonshire and Cornish coasts, and on roofs at Penzance in profusion; on Dartmoor. (Near Loch Long and Loch Fyne, and about Stirling; on walls between Grassmere and Rydal, Westmorland; at the Heads at the foot of West-water, Cumberland; Strands, in Wastdale. Mr. Winch. (Dunstafnage, Argyshire; Loch Nakiel, Isle of Mull. Dr. Bostock. By the road side ascending Haldon from Exeter, in highly ornamental patches. E.)

A. May—July.

S. DASYPHYLLUM. Leaves opposite, (alternate on the flowering stems, E.) egg-shaped, blunt, fleshy, sessile: stem weak: flowers scattered, (panicle glutinous. E.)

(E. Bot. 656. E.)—Jacq. Hort. 153—Curt. 147—H. Ox. xii. 7. 35—J. B. iii. 691.

Stems (three or four inches high, E.) numerous, weak, trailing. Leaves broader than they are long, nearly flat above, convex underneath, sea-green with a tinge of purple. Flowers whitish, few, terminal, solitary. Fruit-stalks branched. Woodw. Stamens often eleven or twelve. Pistils and petals six.

THICK-LEAVED WHITE STONECROP. Walls and roofs. Market-eit near Market street, Hammsmith, and Kew. Bugden, Huntingdonshire. Hudson. Near London. Mr. Woodward. (At Clifton, near Bristol. Mr. Dyer. Walls at Malton; Yorkshire. Rev. Archdeacon Pierson. At Ter-
rington. Rev. J. Dalton. On walls at Petworth, Sussex. Mr. Borrer. Bot. Guide. Conway church, and walls of the town. Mr. Griffith. Colinton woods. Mr. Arnott. Grev. Edin. E.) P. June—July.*

S. REFLEXUM. Leaves arrow-shaped, scattered, spurred at the base: (the lower ones recurved: flowers cymose: segments of the calyx ovate. E.)

* (Sedums in general, (and Saxifrages), form agreeable appendages to rock work or ruins, and none are more ornamental than this and the preceding species. Either roots or cuttings planted in a little mud or moist soil, in crevices, will soon extend themselves to the embellishment of such spots: or on a larger scale, by scattering chopped fragments over recesses, even though inaccessible to hand culture, the same effect may be produced. It has been prettily remarked that the yellow Stonecrop "spreads a continual vegetable sunshine over thatched roofs:"—would that it might be considered emblematical of the prevalent moral temperance within! Haller says *S. reflexum* is eaten in salads. E.)

(*E. Bot.* 695. *E.*)—*Fl. Dan.* 113—*Clus.* ii. 60. 2—*Dod.* 129. 1—*Ger. Em.* 512. 1—*H. Oz.* xii. 6. 6—*Pet.* 42. 5—*Clus.* ii. 60. 1—*Ger. Em.* 513. 6—*H. Oz.* xii. 6. 7—*Pet.* 42. 6—*Fuchs.* 33—*J. B.* iii. 692. 3—*Ger.* 412. 1.

Stems six to twelve inches high. *Branches* often reflexed. *Leaves* green, frequently tinged with red, not crowded, lower ones bowed back, quickly falling off. *Calyx* segments six or seven. *Petals* from five to seven. *Stamens* ten or twelve. *Pistils* and nectaries six. *Flowers* bright yellow, (numerous. *E.*)

(*Var.* 2. *S. reflexum* β. *Fl. Brit.* *S. glaucum.* *Donn.* *E. Bot.* 2477. Differs in being of a more glaucous hue, with much more slender leaves, especially on the radical shoots. *Branches* of the cyme more uniformly spreading; segments of the calyx narrower and more pointed. *Sm. Eng. Fl. E.*)

YELLOW STONECROP OR SENGREEN. (*Welsh: Bywydog Llwynau'r fagwyr.*
E.) Walls, roofs, and rocks, frequent. *P. July.*

S. RUPESTRE. (*Leaves* awl-shaped, spurred at the base, in five rows, crowded: flowers in tufts: segments of the calyx elliptical, obtuse. *E.*)

E. Bot. 170—*Dill. Elth.* 256. 333—*Pet.* 42. 8.

(*Stems* often reddish, six to ten inches high. *E.*) *Leaves* sea-green, more thickly awl-shaped than in *S. reflexum.* *Linn.* *Stems* before flowering closely tiled. *Leaves* scattered. *Flowers* in a close, thick, branched tuft. *Blossom* yellow. *Woodw.* The disposition of the leaves in five rows may be best observed by viewing the plant with the ends of the branches opposite to the eye. Their points are not bent back as in those of *S. reflexum.* The flowers have frequently six or seven respective parts.

ROCK STONECROP. On Cheddar and St. Vincent's Rocks. (*Titterstone Clee Hill, Shropshire. Dr. Evans. On the Breiddin Hills, Montgomeryshire. Aikin. Walls about Darlington. Mr. Robson. Bot. Guide. Rocks near Babicombe, Devon. Rev. J. P. Jones. Rocks and walls about the Peak of Derbyshire. Wick Cliffs, Gloucestershire. E.*) *P. July.**

(*S. FORSTERIANUM.* *Leaves* spurred at the base, those of the branches semi-cylindrical, bluntish, pointed, spreading, in many rows: flowers cymose: segments of the calyx elliptical, obtuse.

E. Bot. 1802.

Very distinct from *S. rupestre* in the bright green colour of its foliage; but the short rosaceous tufts of spreading leaves, which are blunt, with a small bristly point, more essentially distinguish it. *Flowers* in a true cyme, all the primary stalks springing from one point.

WELSH ROCK STONECROP. At the fall of the Rhydol, near the Devil's bridge, Cardiganshire. *Mr. E. Forster. On the rocks of Hisvæ, overhanging the valley of Nant-phrancon. Dr. Richardson and Mr. Llwyd. P. July. Sm. Eng. Fl. E.)*

OXALIS.† *Calyx* five leaves: *Petals* connected at the base: *Capsules* five-sided, opening at the angles.

* Both this and *S. reflexum* are cultivated in Holland and Germany to mix with lettuces in salads. It is acid to the taste.

† (From οξύ, sharp: ὄξαλις; so called from the acidity of its leaves. *Dioscor. Plin. E.*)

O. ASCETOSEI/LA. Stalk single-flowered: leaves ternate: leaflets inversely heart-shaped, hairy: (root jointed, scaly. E.)

Curt. 111—(*E. Bot.* 762. E.)—*Fl. Dan.* 980—*Sheldr.* 26—*Mill. Ill.*—*Walc. Blackw.* 308—*Woodv.* 20—*Fuchs.* 567—*J. B.* ii. 387. 2—*H. Or.* ii. 17. row 4. 1—*Trag.* 521—*Mill.* 195. 2—*Dod.* 578. 2—*Lob.* 499. 1—*Ger. Em.* 1201—*Park.* 746. 1—*Pct.* 63. 7—*Ionic.* i. 219. 1—*Matth.* 837—*Ger.* 1030. 1—*Jacq. Ox.* 80. 1.

(*Scape* two to four inches high, wavy. *Leaf-stalks* long and slender, purplish. E.) *Leaves* frequently purple underneath. *Leaflets* close against rain, (and droop at night. E.) *Flowers* large. *Petals* white, beautifully veined with purple. *Woodw.* The *petals* are connected by small fleshy excrescences, the claws being inserted into the receptacle separate and distinct.

WOOD-SORREL. CUCKOO-BREAD. SOUR TREFOIL. (Scotch: *Gonke-meat.* Irish: *Seamsog.* Welsh: *Suran y coed gwyffredin.* Gaelic: *Biadh-eunain*; *feuda-coille.* E.) Woods, shady hedges, and heaths. *
P. April.*

Var. 2. Blossoms purple.

Lane between North Oworm and Halifax. Ray. (Near Keswick. Mr. Hutton. Ravensworth woods, Durham. Mr. Winch. E.)

O. CORNICULA'TA. Stem reclining, herbaceous: fruit-stalks forming umbels: root fibrous. E.)

(*E. Bot.* 1726—*Linn. Tr.* ii. t. 23. f. 5. E.)—*Jacq. Ox.* 30. 5—*Fl. Dan.* 873—*Clus.* ii. 249. 1—*Dod.* 579. 1—*Lob. Obs.* 495. 2—*Ger. Em.* 1202—*Park.* 746. 2—*J. B.* ii. 388—*H. Or.* ii. 17. row 4. 2—*Ger.* 1030. 2.

(*Stems* downy, leafy, six to eight inches long, prostrate, radicaing. E.) *Filaments* connected as in the Class Monadelphîa. St. *Umbel* generally of two flowers. *Mart.* *Seeds* brown, transversely scored, enclosed in a

* (By a strange corruption this plant obtained the name of *Allchija*, probably from its being called in the south of Italy *Juliola*, whence also its official name *Lucula.* E.) An infusion of the leaves is a pleasant liquor in ardent fevers, and boiled with milk they make an agreeable whey. *Lewis.* Sheep, goats, and swine eat it. Cows are not fond of it. Horses refuse it. The juice is gratefully acid. The *London College* directs a conserve to be made of the leaves, beaten with thrice their weight of fine sugar. The expressed juice depurated, properly evaporated, and set in a cool place, affords a crystalline acid salt, (by modern chemists considered peculiar, and denominated Oxalic Acid, E.) in considerable quantity, which may be used wherever vegetable acids are wanted. It is employed to take iron-moulds out of lincn, and is sold under the name of Essential Salt of Lemons.

We are lately assured that the *leaves* and stalks wrapped in a cabbage-leaf, and macerated in warm ashes until reduced to a pulp, have been successfully applied to scrophulous ulcers. This poultice should remain on the sore for twenty four hours, and be repeated four times. Afterwards the ulcer is to be dressed with a poultice made of the roots of Meadowsweet, bruised and mixed up with the scum of sour buttermilk. *Beddoes on Fact. Airs.* (*Curtis* remarks that the peculiar economy of this delicate plant in some particulars resembles that of the Violet. It continues to produce seed-vessels and seeds, during the greatest part of the summer, without any appearance of expanded blossoms, which are only observable at one particular season. As soon as the plant has done flowering, the flower-stalk, as in many other species, bends down; and when the seed is ripe, again becomes upright. If these seed-vessels be slightly pressed, they open at the angles, and the seeds are thrown out at the apertures; not from any elasticity in the capsule itself, which continues unchanged; but by the expansion of a strong white shining arillus, which covers the seed, and propels it to a considerable distance. E.).

transparent seed-coat, which, being pressed, opens with a jerk, and throws out the seed to some distance. Holecf.; (as in the former species. E.) *Capsules* long and pointed. *Blossoms* yellow, (small. *Leaflets* inversely-heart-shaped, downy, acid. The specific name describes the form of the capsule. E.)

YELLOW WOOD-SORREL. *O. pusilla*. Salisb. Linn. Tr. ii. 243. First observed in Britain by Mr. J. Turner, in several places in the neighbourhood of Exeter. Berkenhout. In a waste rubbishy spot at Dawlish, Devonshire, Sept. 1781, and since in several other places in the same county. Mr. Martin. (On Ben Lomond, Scotland. E.) A. May—Oct.

AGROSTEMMA.* *Calyx* one leaf, tubular, coriaceous: *Petals* five, with claws: border blunt, undivided: *Caps.* one-celled.

A. GITHAGO. Plant hairy: calyx longer than the blossom: petals entire, not crowned with teeth.

(*E. Bot.* 741. E.)—*Curt.* 209—*Kniph.* 5—*Fl. Dan.* 576—*Dod.* 173—*Lob. Obs.* 23. 2—*Ger. Em.* 1087—*Park.* 632. 9—*H. Ox.* v. 21. 31—*Pet.* 57. 12—*Fuchs.* 127—*J. B.* iii. 341. 2—*Trag.* 127—*Matth.* 798—*Ger.* 926—*Walc.*—*Lonic.* i. 83. 3.

(*Stem* erect, two or three feet high, leafy, branched. *Leaves* sessile, strap-spear-shaped. *Calyx* ten-ribbed, hard and tough. E.) *Flowers* purplish red, sometimes white, (streaked, large. E.)

CORN COCKLE. (Irish: *Cogal*. Welsh: *Bulug*. E.) In corn-fields, frequent. A. June—July.†

LYCHNIS.‡ *Calyx* one leaf, tubular, five-toothed: *Petals* five, with claws, limbs often cloven, (and mostly crowned: E.) *Caps.* one or five-celled.

L. DIOICA. Flowers dioecious: capsule one-celled: (petals cloven, crowned with four teeth. E.)

(*Stems* one to three feet high, branched, hairy, viscid at the joints. *Leaves* hairy, egg-spear-shaped, sessile above, the lower ones stalked, sometimes wavy. *Cal.* tubular, dark red or purplish, ten-ribbed, in the fertile flowers ovate, ventricose; in the sterile ones cylindrical. *Flowers* in a terminal, leafy, branched panicle. E.)

Var. 1. Diurna. Blossoms red, scentless: capsules roundish.

Curt.—(*E. Bot.* 1579. E.)—*Kniph.* 116—*Ludw.* 170—*Walc.*—*Clus.* i. 294. 1—*Dod.* 171. 1—*Lob. Obs.* 181. 2—*Ger. Em.* 69. 1—*Park.* 631. 1 and 2—*H. Ox.* v. 21. 23—*Pet.* 57. 6.

A specimen gathered on the rocks at Blaize Castle, near Bristol, has the upper leaves egg-shaped, and the lower ones circular.

* (From *αγρος*, a field; and *στέμμα*, a coronet; quasi the garland of the fields. E.)

† (Should be eradicated by hand whilst young. The seeds being black and rough have been compared to a rolled up hedge hog. They are heavy, and their black husks, when mixed with wheat, breaking so fine as to pass the sieves, render the flour specky. They are therefore obnoxious to the millers, and depreciate the sample of corn. E.)

‡ (From *λυχνίς*, a lamp; alluding to its flame-coloured and flickering petals: or, as others conjecture, from the resemblance of the semi-transparent calyx to a lantern. E.)

RED CAMPION. CAMPION CUCKOO-FLOWER. (Irish: *Cororan Coilleah*. Welsh: *Llys grychen*; *Lluglys ysgar*. E.) Hedges, ditches, and moist woods. The rocks on the isle of Ailsa are covered with it, where there is none of the white. Lightfoot. The red flowered very common, the white very rare, about Manchester; the white common about Chester, but none of the red. Mr. Caley. This fact tends to corroborate the opinion of Dr. Sibthorp, who considers them distinct species. P. May—Sept.*

Var. 2. *Vespertina*. Taller than the preceding: blossom white, sweet-scented in the evening; capsules conical.

(E. Bot. 1580. E.)—Walc.—Matth. 997—J. B. iii. 342—Pet. 57. 5—Fl. Dan. 792—H. Ox. v. 21. 1.

WHITE CAMPION, OR CUCKOO-FLOWER. Pastures, hedges, and fallow fields, sometimes so plentifully as to make them appear at a distance quite white, where the red is never found. Stokes. (Mr. Dillwyn finds this plant with very full double white blossoms, on the sides of the north end of the Old Haven at Sandwich. Bot. Guide. E.) P. June—Aug.

(It is admitted by the most competent Botanists that even the distinctive appearances of the varieties are not permanent, and either will occasionally change to a pale rose or bluish colour. E.)

L. FLOS-CUCULI. Petals (three or) four-cleft: capsule roundish, one-celled: (stem hairy. E.)

(E. Bot. 573. E.)—Curt.—Kniph. 11—Walc.—Fl. Dan. 590—Trag. 403—Iconic. i. 171. 1—Ger. 480. 1 and 2—Clus. i. 292. 2—Dod. 177—Ger. Em. 600. 1—H. Ox. v. 20. 8—Pet. 56. 6.

(Stem one to two feet high, quadrangular, reddish green, viscid upwards. Leaves spear-shaped, smooth; the lower ones tapering into foot-stalks. Panicle forked, viscid, with a pair of bracteas at each division. E.) Petals, the two middle segments the longest. Claws with two small spear-shaped teeth at the top. Blossom pink, or purplish red; sometimes white.

MEADOW LYCHNIS. MEADOW PINK. RAGGED ROBIN. Moist meadows and pastures. P. June.

Var. 2. Double flowered.

Mill. 169. 2—Clus. i. 293. 1—Ger. Em. 600. 3—Park. Per. 255. 5.

PLEASANT-IN-SIGHT. Meadow, near Bungay. Mr. Woodward.

L. VISCA'RIA. (Petals nearly entire: leaves fringed at the base: stem viscid near the joints. E.)

(E. Bot. 788. E.)—Fl. Dan. 1332—Kniph. 12—Clus. i. 289. 2—Ger. Em. 601. 3—Park. 637—H. Ox. v. 20. 6—Pet. 57. 3—J. B. iii. 348. 2.

Stems, the upper part of the superior joints anointed with a reddish black like tar, in which ants, and other wingless insects are inviscated, in attempting to creep up to the flowers. Linn. Stem upright, a foot high, simple. Blossom red, (large and handsome, forming a dense panicle. Leaves strap-spear-shaped, dark green. E.)

Var. 2. White-flowered. (Sometimes double in gardens. E.)

RED GERMAN CATCHFLY. CATCHFLY CUCKOO-FLOWER. Mountainous pastures, and fissures of rocks. E.) Sides of Craig Breiddin, Mont-

(*Maria Lychnitis* is found upon it. The different species of *Lychnis* are prone to produce double flowers, red or white, and in this state are acceptable to the florist. E.)

gomeryshire. Ray. Rocks in the King's Park, Edinburgh, on the south side; and abundantly at Craig Hall, Perthshire, on rocks. Mr. Brown. Near Croydon, Surry. Mr. Crowe. P. May—June.

(*L. ALPINA*. Smooth: petals bifid: flowers forming a corymb: leaves strap-spear-shaped, naked at the base.

E. Bot. 2254—*Fl. Dan.* 65.

Resembles *L. viscaria*, but is smaller, not viscid, and with petals half-divided. Styles five, (but not invariably so. E.)

RED ALPINE CAMPION. Discovered by Mr. Don, on rocks near the summit of Clova, Angus-shire, but very scarce.

P. June—July. *E. Bot. Linn. Tr.* E.)

(This plant, with which we have been favoured by the kindness of Mr. Winch, extremely resembles specimens in our Herbarium, communicated by Mr. Brown twenty years ago for *S. viscaria*, gathered in Perthshire, and also then said to have been found in Angus-shire by Mr. Don. Our specimen of the real Lapland *alpina* furnished by Sir Charles Thunberg, is of much more humble growth, exhibiting a stunted and strikingly different habit. E.)

CERASTIUM.* *Calyx* five-leaved: *Petals* cloven: *Caps.* one-celled, opening at the top.

(1) *Capsules oblong.*

C. VULGATUM. (Hairy, viscid, suberect: leaves ovate, obtuse: flowers subcapitate, longer than their stalks. Sm. Hook. E.)

(*E. Bot.* 789. E.)—*Curt.*—*Vaill.* 30. 3—*Pet.* 58. 5.

Hairs on the calyx and on the upper part of the stem ending in oval or globular glands, containing a viscid liquor, which gives a clamminess to the touch. (Whole plant hairy and more or less viscid. Six to ten inches high, branched below, dichotomous above. *Caps.* twice the length of the calyx. It approaches very near *C. viscosum*, but is more upright and less spreading. *Petals* white, cloven, nearly half-way down, narrow, scarcely exceeding the calyx. Sir J. E. Smith, who has rescued this and the following species from their former confusion, observes, that "the light green hue, yellowish in decay, of *C. vulgatum*, its broad ovate leaves and smaller flowers, distinguish it from *C. viscosum*." E.)

(**BROAD-LEAVED MOUSE-EAR CHICKWEED.** Welsh: *Corn-wlyddyn*; *Clystlygodyn*; *lydanddail*. *C. vulgatum*. Linn. *C. viscosum*. Huds.

With. Ed. 3. Relh. Curt. Sibth. Abbot, Huft, &c. in error from the insufficiency of the Linnæan characters. E.) Meadows, pastures, walls, dry banks, and ant-hills.

A. April—June.

C. VISCOSUM. (Hairy, viscid, spreading: leaves lanceolate-oblong: flowers somewhat panicked, shorter than their stalks. Sm. Hook. E.)

(*E. Bot.* 790. E.)—*Curt.* 130—*Vaill.* 30. 1—*Walc.* 5—*Pet.* 58. 6—*J. B.* iii 359. 1.

* (Diminutive of *κερας*, a horn; descriptive of the elongated capsule, as exemplified in *C. alpinum*. E.)

(This species is also viscid, "though less so at an advanced age, and in cold weather." E. Bot. The most obvious distinction seems to be the trailing, or upright stems. E.) Whole *plant* rough with hairs. *Calyx* leaves membranous at the edge. (A larger, coarser, and spreading *plant*, with longer and narrower leaves and flowers, shorter than their foot-stalks in general, and especially in fruit. Hook. The stronger the plant the smaller the petals and *vice versâ*, hence by the size of its petals alone it is sufficiently distinguished on heaths, where it frequently grows about two inches high, and is often taken for *C. semidecandrum*. Fl. Lond. When growing among other plants, upright. Whole *herb* of a darker green than the preceding. E.) When growing in bogs the leaves are sometimes as convex as an egg cut through lengthwise. Aik.

(NARROW-LEAVED MOUSE-EAR CHICKWEED. *C. viscosum*. Linn. *C. vulgatum*. Huds. With. Ed. 3. Relh. Curt. Sibth., &c. Welsh: *Cornwlyddyn*; *Clust Llygoden*, *culddail*. E.) Meadows, pastures, walls, sides of roads and amongst rubbish. P. May—Aug.

C. ALPINUM. (Leaves elliptical, naked, or clothed with long hairs: panicle forked, of few flowers, bracteate: capsule oblong, recurved. E. Bot. E.)

(E. Bot. 472. E.)—Fl. Dan. 6—Lightf. 10. p. 242—Ray 15. 2. p. 348.

Whole *plant*, except the petals and capsules, covered with long, soft, shining hairs. *Lower leaves* oval; *upper* oval-spear-shaped, opposite. *Branches*, terminated by one or two flowers. *Flowers* large, on separate fruit-stalks, each furnished with two opposite spear-shaped floral-leaves. *Capsule* when ripe lengthened out into a straight horn. Woodw.

We have two varieties of this, one with the leaves quite smooth and almost glossy; the other with woolly leaves; but they are clearly one species. What can be the cause of the smoothness of the one, growing as they do, internixed? *Flowers* generally one, and sometimes two, but in the Dutch gardens, several on a stem. Linn. Fl. Lapp. Some *plants* green, and others hoary. Doubted whether not two distinct species. Ray. *Hairs* on the fruit-stalks transparent, jointed, the knots somewhat opaque. Griff. From two to four inches high, branched and creeping below. *Flowers* white, (petals obcordate. E.)

ALPINE MOUSE-EAR CHICKWEED. Mountains and sides of rills, as on Snowdon, on the north side of y Wyddfa and Clogwyn dŷ r Arddu near Llanberris. Top of Clogwyn y Garnedd, very near to plants of *C. latifolium*. Mr. Griffith. (On Ben Lawers and Lomond. On Helvellyn, towards Patterdale. Mr. Winch. E.) P. July—Aug.

C. LATIFOLIUM. (Leaves elliptical, rough, with short, bristly hairs: flower-stalks terminal, simple, mostly solitary: capsule oval. E. Bot. E.)

(E. Bot. 473. E.)—Jacq. Coll. i. 20.

(The stems form tufts, but are shorter and more thickly set with leaves than in *C. alpinum*; leaves broader and more obtuse, clothed (constantly, as far as we have observed) with numerous short rigid spreading bristly hairs, various in position and direction, making a harsh kind of covering, quite different from the silky hairs of *C. alpinum*. They are also in general more thickly jointed. The flower-stalks are terminal, mostly solitary, simple, often as long as the whole stem, clothed with glandular spreading hairs, and frequently destitute of bractæ. The flowers differ but little

from that species. It appears that the *stem* is at length protruded beyond the insertion of the flower-stalk, and may occasionally bear an autumnal flower when the first has ripened its seed. The *capsule* is oval, and is not curved, shorter than that of *C. alpinum*. E. Bot. *Capsules* globular at first, but when ripe a long straight horn. Hall. Wulfen in Jacq. Coll. Lowermost *leaves* frequently glabrous. Hook. E.) Lightfoot refers his Scottish specimens to *C. latifolium*, but his figure represents *C. alpinum*.

(BROAD-LEAVED MOUSE-EAR CHICKWEED. E.) Specimens from Mr. Griffith, gathered on Clogwyn y Garnedd, agree with a specimen which I have from Switzerland. Mr. Griffith observes that it grows in no other place about Snowdon. (On the Highland mountains. Mr. Mackay. E.)
P. Junc.

C. ARVENSE. Leaves strap-spear-shaped, bluntish, fringed at the base: blossoms larger than the calyx.

(Curt. N. E. E.)—E. Bot. 93—Kniph. 8—Vaill. 30. 4 and 5—Ger. 477. 11—Fl. Dan. 626—J. B. iii. 360. 1—Ger. Em. 595. 15—Park. 1339. 7.

(Stems numerous, entangled and decumbent at the base, six to twelve inches long. Leaves about an inch in length, varying in breadth, pointed, covered with a short thick down, as are the stems. Petals twice as long as the calyx, white, few. E.)

(FIELD CHICKWEED. E.) *Caryophyllus Holostius arvensis*. Ger. Em. 595. Corn-fields, gravelly meadows and pastures, at the foot of walls, dry banks, and heaths, in Cambridgeshire. Dupper's Hill, near Croydon. About Bury, frequent, amongst corn. Mr. Woodward. Near Norwich. Mr. Crowe. By hedges, but rarely amongst corn. Mr. Robson. (On Fulwell Hills, Marsden Rocks, and near Chester Bridge, Durham; also at Friar's Goose, near Gateshead. Winch Guide. Guillon.links. Mr. Arnott. Grev. Edin. E.)
P. May—Sept.

C. SEMIDECANDRUM. Hairy and viscid: stamens five: petals slightly cloven.

Dicks. H. S.—Curt. 122—(E. Bot. 1630. E.)—Ray 15. 1. at p. 348—Vaill. 30. 2.

(Stems very short, (two or three inches high. E.) Leaves egg-shaped, opposite, somewhat channelled, blunt, sprinkled with very short hairs. Fruit-stalks very short, each with one flower. Calyx with glutinous hairs, membranous at the point and edges. Petals strap-shaped, white, sharply notched at the end. Stamens five, with white anthers, the five inner ones without anthers. Five nectariferous dots between the fruitful stamens and the petals. Linn. *Burden filaments* not found with us. *Stamens*, fertile ones sometimes more than five. (A plant truly paradoxical, greatly resembling *C. viscosum*, yet admitted by all Botanists to be a species *per se*, well marked, though no one has been able to discriminate it by characters. Smith observes that it displays itself on every wall in early spring, and withers away before *C. viscosum* begins to put forth its far less conspicuous blossoms. E.)

(A variety has been remarked, with larger petals, eleven one-third of their length, and having capsules twice as long as the calyx. *C. pumilum*. Curt. Fl. Lond. f. 30. With. Abbot. *C. semidecandrum* β. Sm. E.)

(*C. humile* of Rev. Hugh Davies is described, "hirsutum; floribus pentandris, petalis linearibus, integris; calyce brevioribus, caulibus procumbentibus."

On Aberffraw Common, bordering on Bwlan farm, Anglesey, may possibly prove a distinct species. E.)

(DWARF MOUSE-EAR CHICKWEED. Welsh: *Corn-wlyddyn*; *Clust Llygoden*; *corraidd*; *a blodeuddail gwahanedig*. E.) Walls, pastures, and heaths. A. April—May.

(2) *Capsules globosc.*

C. umbellatum, see *Holosteum umbellatum*.

(*C. tetrandrum*, see *Sagina Cerastoides*. E.)

C. AQUATICUM. Leaves heart-shaped, sessile: flowers solitary: sules pendent, (quinquedentate, petals deeply divided. E.)

(*E. Bot.* 538. E.)—*Curt.*—*Dod.* 29. 1—*Ger. Em.* 611. 1—*Park.* 759. 2—*Ger.* 488. 1.

(*Stam.* always ten, and *styles* five. Sm. *Stems* weak and straggling, one to two feet long, branched, viscid upwards. E.) In habit much resembling the larger plants of *Stellaria nemorum*, but the *petals* are much larger than the calyx, and the hairiness on the *stem* is general and not limited, as in that plant, to a line extending along it. *Leaves* often heart-spear-shaped, and sometimes curled at the edge. *Whole plant* set thick with fine short hairs, terminated by globular heads, containing a clammy juice. *Flowers* white.

(MARSH MOUSE-EAR CHICKWEED. E.) Watery places, banks of rivers, mostly among bushes. P. July.*

SPERGULA.† *Cal.* five leaves: *Petals* five, entire: *Caps.* egg-shaped, of one (five cells, according to Hooker, E.) cell, and five valves.

S. ARVEN'SIS. Leaves in whorls: (peduncles reflexed: seeds more or less bordered. E.)

Curt.—(*E. Bot.* 1535. E.)—*Fl. Dan.* 1033—*Dod.* 537—*Lob. Obs.* 467. 1—*Ger. Em.* 1125—*Park.* 562—*J. B.* iii. 722. 1—*Pet.* 59. 6.

(*Stems* six to twelve inches high, swollen at the joints. *Leaves* linear, about three on each side of every joint, linear, narrow, fleshy, flat above, rounded beneath. *Panicle* branched, of many flowers. E.) *Stamens* in the autumn frequently fewer than ten. *Seeds* rough with rising dots when ripe black, with an obsolete border. *Flowers* white.

CORN SPURRY. (ROUGH-SEEDED CORN SPURRY. Irish: *Cabrius* Welsh: *Troellig yr yd*; *Cedor y wrach*. E.) Corn-fields and sandy places, especially where water has lain; gravel walks. A. July—Sept.

* (This species, tender, succulent, and abundant in moist places, is not unacceptable to cattle. E.)

† (Diminutive of *spargando*: as scattering about its seeds with something like an elastic force: or rather, according to Dodonæus, latinized from the name of this herb in Brabant whence also its English appellation. E.)

‡ Poultry are fond of the seed; and the inhabitants of Finland and Norway make bread of them when their crops of corn fail. Experience shows it to be very nutritious to cattle that eat it. Horses, sheep, goats, and swine eat it. Cows refuse it. (*Cassida Spargula* is found upon it. (It is occasionally a troublesome underling weed; but a larger growing

(Var. 2. SMOOTH-SEEDED CORN SPURREY. *S. pentandra*. E. Bot. *S. arvensis* β. Hook. Sm. Eng. Fl. Having stamens only five; seeds lenticular and smooth, with a whitish membranous border.

E. Bot. 1563.

At first supposed by Smith to constitute a distinct species, but as the plant usually grows intermixed with *S. arvensis*, and is only to be recognised by a minute examination of the flowers and seeds, we cannot assign it such a distinction: and it has since been admitted that intermediate appearances may be traced. E.)

S. SUBULATA. (Leaves opposite, awl-shaped, bristle-pointed, fringed: flower-stalks solitary, much longer than the leaves, slightly hairy. E.)

Curt. 139—(E. Bot. 1082—Fl. Dan. 858. E.)

(Scarcely two inches high, branched, and decumbent at the base; each branch terminating in a flower-stalk one inch long, with a small white-petalled flower, erect when expanded, but generally drooping before and after: Hook., who reports the glandular hairs on the margins of the leaves to be sometimes wanting. E.)

(AWL-SHAPED SPURREY. Welsh: *Troellig mynauyddidd*. *S. procumbens* β. Linn. E.) *S. saginoides*. Curt. *S. laricina*. Lightf. Huds. Dry pastures in a gravelly soil. Uxbridge Moor. Isle of Bute; Cobham and Esher, Surrey; Devonshire and Cornwall; Putney Heath, Combe Wood; Bagshot Heath; Potnell Warren; near the great bog at Virginia Water. Sandy ground by road sides near Forfar, and between Dundee and St. Andrew's. Mr. Brown. (On a dry common, half a mile from Nantglyn, by the road side leading to Groes, Denbighshire. Mr. Griffith. Near Holyhead. Welsh Bot. E.) P. June—Aug.

S. NODOSA. Leaves opposite, awl-shaped, smooth: stems simple: (petals much longer than the nerveless calyx. E.)

Curt. 261—(E. Bot. 694. E.)—Kniph. 11—Fl. Dan. 96—J. B. iii. 724—Ger. 567. 6—Purk. 427. 3—Pluk. 7. 4—Pct. 59. 5.

Branches of very minute leaves in the bosom of the opposite leaves, which are the rudiments of small branches. Ray. Stems trailing, (three to six inches long, rarely branched. Flowers terminal, few, large, white. Stems nearly upright: pistils sometimes only three; axillary tufts or branches often deciduous. Roberts. E.)

NOTTED SPURREY. (Welsh: *Troellig clymmog*. E.) Marshy places, wet pastures and sides of rivers, lakes, and marshes. Bogs about Settle, and in the north. Curtis. Boggy ground in Sutton Park, Warwickshire. Dr. Stokes. Side of the lake at Llanberris, plentiful. Mr. Aikin. (Among the quarries of Spoonbed Hill, Painswick. Mr. O. Roberts. Near Fulwell Turnpike gate, Durham. Winch Guide. On the High Tor Docks, Dartmoor. Rev. J. Pike Jones. About Lyd and Sandgate, Kent. Mr. G. E. Smith. In Anglesey. Welsh Bot. Pentland hills, and King's Park. Grev. Edin. E.)

variety called *S. sativa*, is cultivated in some parts of Germany for sheep, and for reclaiming waste sands. The seed of this sort may be had of Mr. Sinclair, New Cross, near London. Perhaps where turnips fail Spurrey may be sown with advantage, but its produce is too inferior to be worthy of general attention in England. E.)

(*S. saginoides*. Leaves awl-shaped, opposite, pointless, naked: fruit-stalks solitary, very long, smooth.

E. Bot. 2105—*Fl. Dan.* 12.

Root fibrous. *Whole plant* smooth. *Stems* lying down, a little branched, an inch and a half to three inches long, leafy, cylindrical, knee-jointed, upright towards the extremity. *Leaves* united at the base, awl-shaped, sharp-pointed. *Fruit-stalks* mostly terminal, solitary, upright, one-flowered, cylindrical, naked, very smooth, nearly as long as the stems. *Blossoms* bent downwards, white. *Leaflets* of the calyx egg-shaped, blunt, smooth, almost destitute of fibres, gibbous at the base. *Petals* roundish, blunt, very entire, shorter than the calyx. *Stamens* ten, scarcely longer than the petals. *Capsules* egg-shaped, twice the length of the calyx, five-valved. *Seeds* kidney-shaped, brown, not bordered. *Fl. Brit.*

Swartz is said to have found this plant with only five stamens.

SMOOTH AWL-SHAPED OR PEARL-WORT SPURNEY. *S. saginoides*. Linn. On the highest mountains of Scotland. On Ben Lawers, where it was discovered by Mr. J. Mackay, in 1794, *Fl. Brit.* but previously by Mr. G. Don, on Mall-ghyrdy. *E. Bot.* On Ben Lomond. M. Winch. *E.*)

CLASS XI.

DODECANDRIA.

MONOGYNIA.

CERATOPHYLLUM. *Flowers* B. and F. on the same plant :
Bloss. none : *Cal.* with many divisions.

F. *Style* none : *Nut* single-seeded.

ASARUM. *Bloss.* none : *Cal.* three-cleft, superior : *Caps.*
six-celled.

LYTHRUM. *Bloss.* six petals : *Cal.* twelve-toothed, beneath :
Caps. one or two-celled.

DIGYNIA.

CARPINUS. *Flowers* B. and F. on the same plant : *Bloss.*
none : *Cal.* one scale, fringed.

B. *Stam.* ten to sixteen.

F. *Germens* two, with two styles to each : *Nut* egg-
shaped.

AGRIMONIA. *Bloss.* five petals : *Cal.* five-cleft : *Seeds* one
or two.

*[Mercurialis. Cratægus.]

TRIGYNIA.

FAGUS. (*Flowers* B. and F. on the same plant : *Bloss.* none.
B. in a globose catkin : *Perianth* single, of one
leaf, campanulate, six-cleft : *Stam.* five to twelve.

F. two, in a four-lobed, prickly *involucre*: *Perianth* single, four or five-cleft: *Styles* three: *Nuts* one-seeded, invested with the enlarged *involucre*. Hook. Grev. E.)

(CASTA'NEA. *Flowers* B. and F. on the same plant: *Bloss.* none.

B. in a long cylindrical catkin: *Perianth* single, of one leaf, six-cleft: *Stam.* five to twenty.

F. three, within a four-lobed, prickly *involucre*: *Perianth* single, five or six-lobed: *Styles* six: *Nuts* one or two-seeded, invested with the enlarged *involucre*. Hook. Grev. E.)

RESE'DA. *Bloss.* petals many-cleft: *Cal.* divided: *Caps.* one-celled, gaping.

EUPHOR'BIA. (*Perianth* single, monophyllous, inferior: *Nectaries* (*petals*, Linn.) four or five, inserted upon the *perianth*: *Stam.* jointed: *Caps.* pedicellate, three-lobed. Hook. E.)

(*Involucrum* with numerous B. and one F. fl.)

B. *Cal.* none: *Cor.* none.

F. *Cal.* none: *Cor.* none: *Caps.* three-lobed: *Styles* three, cloven. Sm. E.)*

TETRAGYNIA.

[*Tormentilla erecta*.]

HEXAGYNIA.

[*Sedum dasyphyllum*.]

DODECAGYNIA.

SEMPERVIVUM. *Bloss.* twelve petals: *Cal.* with twelve segments: *Caps.* twelve.

[*Thalictrum alpinum*.]

* (For a succinct statement of the reasons for arranging the genus *Euphorbia* under *Monoclea Monandria*, see vol. 1. p. 245. 249. E.)

MONOGYNIA.

AS'ARUM.* *Calyx* three or four-cleft, sessile on the germens: *Bloss.* none: *Caps.* coriaceous, crowned. of six cells, but no valves.

A. EUROPE'UM. (Leaves two on each stem, kidney-shaped, dark green, shining, very entire, on long hairy foot-stalks. E.)

(*E. Bot.* 1083. E.)—*Woodv.* 86—*Kniph.* 9—*Ludw.* 182—*Sheldr.* 19—*Fl. Dan.* 633—*Mill. Ill.*—*Blackw.* 383—*Trag.* 64—*Dod.* 358—*Lob. Obs.* 328. 2—*Ger. Em.* 836. 1—*H. Or.* xiii. 7. row 3. 1—*Park.* 266. 1—*Matth.* 36—*Fuchs.* 10—*J. B.* iii. 548—*Mill.* 53. 1. a.

(*Root* strong-scented, thick, and fleshy. *Stem* very short. *Stamens* concealed in the bottom of the calyx. *Flower* large, purplish, solitary, terminal, drooping. E.)

ASARABACCA. Woods and shady places. Lancashire, (near Preston, &c. Ray. Near Kirkby Lonsdale, Westmoreland. Dr. Batty. Fl. Brit. By the road side between Henley and Maidenhead. Rev. Charles Abbot. E. Bot. Ramskin; Martindale; and Keswick. Hutchinson. Plentiful in Broad-bottom wood, near Mytholmroyd, six miles from Halifax. Mr. Roberts Leyland. Eng. Fl. Waste ground about Ormathwaite, but suspected to have been introduced as an officinal plant. Mr. Winch. West Binny, near Lidlithgow. Miss Liston. Hook. Scot. E.) P. May.†

CERATOPHYLLUM.‡ B. and F. flowers on the same plant: *Cal.* with many divisions: *Bloss.* none.

B. *Stamens* (often sixteen to twenty, E.) twice as many as the segments of the calyx.

F. *Style* none: *Nut* one-seeded.

C. DEMER'SUM. (Capsule armed with three beaks or spines: segments A. of the calyx notched at the end. E.)

(*E. Bot.* 947. E.)—*Fl. Dan.* 510—*Locs.* 12. at p. 67—*Vaill. Hist. de l'Acad.* vol. for 1719. p. 21.

Root striking deep in the mud. *Stem* (two or three feet long. E.) much branched, the lower part generally covered with mud. *Leaves* about eight in a whorl, the lower whorls about half an inch distant, but closer

* (According to Pliny from α , privative; and $\sigma\alpha\iota\varphi\omega\varsigma$, to adorn; because it was not thought worthy of being inserted in garlands. E.)

† (The dried roots of this plant have been generally imported from the Levant, those of our own growth being supposed weaker. The roots and leaves have a nauseous, bitter, acrimonious, hot taste; and strong smell. They are powerfully emetic and cathartic.

according to Geoffroy, continuing two or three days. He states that paralysis of the mouth and tongue has been speedily removed thereby. This herb has been recommended as powerful diaphoretic. E.)

‡ (From $\sigma\epsilon\alpha\varsigma$, $\kappa\epsilon\rho\alpha\tau\omicron\varsigma$, a horn, and $\phi\upsilon\lambda\lambda\omicron\varsigma$, a leaf; the leaves being forked like horns. E.)

upwards, and extremely crowded towards the end; twice-forked, bristle-shaped, harsh and somewhat brittle, semi-transparent, green, spotted with short purple lines, and the extreme forks toothed on the outside only; those on the part of the stem covered with or lying on the mud, short, forked, much thicker than those above, and appearing as if broken or bitten. *Flowers* few, in the bosom of the leaves. *Seed-vessel* with one long thorn at the summit, and two shorter on opposite sides near the base. Woodw.

FLOATING HORNWEED OR HORNWORT. Ditches and slow streams.

P. Aug.—Sept.*

C. SUBMER'SUM. (Capsules without spines: segments of the calyx acute, entire. E.)

(*E. Bot.* 679. E.)—*Vaill. Hist. de l'Acad.* 2. 2. vol. for 1719. p. 16.

So nearly allied to *C. demersum* that it may prove to be only a variety. Linn.

UNARMED HORNWORT. E.) Ditches on the side of the road from, Chichester to the Isle of Selsey. Ray. (Near Yarmouth; and at Gorleston, Suffolk. Mr. Dawson Turner. Newburgh ponds, Yorkshire. Rev. Archdeacon Pierson. Bot. Guide. E.) P. Sept.

LYTHRUM.† *Cal.* with twelve (or sixteen) teeth: *Petals* (five or) six, inserted on the calyx: *Capsule* two-celled, many-seeded.

L. SALICARIA. Leaves opposite, heart-spear-shaped: flowers in whorled, leafy spikes, twelve stamens in each.

Curt. 186—(*E. Bot.* 1061. E.)—*Kniph.* 5—*Fl. Dan.* 671—*Matth.* 950—*Clus.* ii. 51. 1—*Dod.* 86. 1—*Ger. Em.* 476. 5—*Park.* 546. 1—*Pet.* 62. 6—*Blackw.* 520—*Ger.* 386. 2.

Stem upright, (three or four feet high, quadrangular. E.) *Leaves* spear-shaped, sessile, all opposite, or all alternate, or the lower ones opposite and the upper ones alternate. *Flowers* in tufts in the bosom of the leaves, sometimes close together; forming a long leafy spike. *Calyx* hairy, six, of the teeth short and blunt, the other six awl-shaped. *Petals* fixed within the longer teeth of the calyx, purple. Sometimes a single anther grows to one of the petals, and in this case, besides the twelve perfect stamens, a single filament is found, without an anther. (*Leaves* occasionally three in each whorl, with the stem hexangular. E.)

PURPLE-SPIKED LOOSESTRIFE OR GRASSPOLY. (Irish: *Irchull Caitin*. *Braian*, *Leanc*. Welsh: *Gwyarllys*; *Llys y milwr*. E.) Marshes and banks of rivers. P. July—Aug.†

* (Mr. Purton mentions this plant having suddenly become very abundant in a pond, (after the process of madding), wherein it had been unknown before; and conjectures that, till then the seeds must have been buried too deep for vegetation: a circumstance which, doubtless, may frequently account for the fluctuating appearance of plants. *Vid. Osmunda regalis*. E.)

† (From *λυθρον*, blood; the colour descriptive of its purple flowers. E.)

‡ (Threlkeld, a physician who flourished somewhat more than a century ago, notices the good effects of a strong decoction of this plant in cases of dysentery, and since his time, the celebrated De Haen has maintained the credit of the remedy both in the above disorder, and in obstinate diarrhoea. E.)

L. HYSSOPIFOLIUM. (Leaves alternate, strap-spear-shaped: flowers axillary, solitary, with six stamens. E.)

Hall. Jen. 6. 2. at p. 295—*Jacq. Austr.* 133—(*Purt.* 2. E.)—*E. Bot.* 292—*C. B. Pr.* 108—*J. B.* iii. 792. 3—*Ger. Em.* 581. 2—*Park.* 220. 2—*Hall. Jen.* 6. 3.

(A very diminutive plant compared with the preceding. *Stems* trailing, only branched near the root, purplish, leafy, rather stiff, an inch long. *Leaves* sessile, quite entire. *Calyx* tubular, with five or six open teeth. *Petals* six, bluish purple, white at the base, small. *Stamens* shorter than the calyx. E.)

HYSSOP-LEAVED LOOSE-STRIPE OR GRASSPOLY. Watery places, and where water has remained stagnant during the winter. Near the Wheat-sheaf Inn, five miles from Huntingdon, on the north road. Mr. Woodward. (In a wheat-field just beyond Barton Mere, near the direction post, on the road leading to Pakenham and Barrow Bottom. Sir T. G. Cullum. In watery pits on the left hand of the first turnpike-gate on the Banbury road from Oxford. Sibthorp. In places where water sometimes stagnates a little below Wilford Boat, Nottinghamshire. Deering. Between Staines and Laleham, in a marshy field by the road. Blackstone. Ditches near the Abbey Pond at Faversham. Jacob. On the road side near Gelli, towards Carmarthen. Evans. Badsey, near Evesham; stubble fields at Bretforton, Worcestershire. Purton. E.) A. July—Aug.

DIGYNIA.

CARPINUS. B. and F. flowers on the same plant: *Bloss.* none: *Cal.* one leaf, a fringed scale.

B. *Stamens* eighteen or twenty..

F. *Germens* two, with two styles on each: *Nut* ovate, striated.

C. BETULUS. (Bractees of the fruit oblong, serrated, flat, with two lateral lobes. E. Bot. E.)

(*E. Bot.* 2032. E.)—*Matth.* 145—*Ger.* 1296—*Park.* 1406—*J. B.* i. b. 146—*Hunt. Evel.* p. 143; i. p. 138. ed. ii.—*Clus.* i. 55. 2.—*Dod.* 841—*Lob. Obs.* 607. 2, and *Id.* ii. 190. 1—*Ger. Em.* 1479—*Trag.* 1109—*Lonic.* i. 33. 2.

Barren flowers in a cylindrical drooping catkin, with fringed, single-flowered scales. *Fertile flower* in a lax catkin, its scales large, foliaceous, three-lobed, one flowered; or, according to Smith, "in a bracteated cluster, aggregate, having no proper *amentum*, as the true nature of the covering of the seed, as well as of the common stalk, proves." *Filament* dividing at the top, each division supporting a distinct anther. *Bark* smooth, white. *Leaves* oval, pointed, sharply serrated, (when first expanding plaited in delicate folds. E.) A tree of rather humble growth. *Seed* or *nut* angular, about the size of a barley-corn.

HORN-BEAM, (or **HARD-BEAM,** from the hard, horny nature of its wood. The *Witch* or *Wych-Hasel* of Essex. Welsh: *Oestrwydden gwyfredin.* E.) 14

woods and hedges ; (especially in Kent, Hertfordshire, about Gravesend, and in Northamptonshire, but very few westward E.) T. April—May.*

AGRIMONIA.† *Calyx* five-toothed, with a lobed appendage at its base : *Petals* five : *Seeds* two, in a capsule at the bottom of the indurated calyx.

A. EUPATORIA. Stem-leaves winged ; terminal, one-stalked ; fruit (or calyx) hispid.

Curt. 317—(*E. Bot.* 1335. E.)—*Kniph.* 5—*Woodv.* 258—*Ludw.* 29—*Mill.* *Ill.*—*Fl. Dan.* 588—*Ger.* 575—*Blackw.* 283—*Fuchs.* 244—*J. B.* ii. p. k. 298—*Dod.* 28. 1—*Lob. Obs.* 394. 2—*Ger. Em.* 712—*Park.* 594. 1—*Matth.* 1014—*Trag.* 514—*Lonic.* i. 218. 1.

Stem cylindrical, two feet high, roughish, hairy. *Leaves* a span long, hairy, covered with rising dots, and segments ending in small reddish glands, interruptedly winged ; the smallest pair of leaflets entire, the others deeply serrated, oblong-egg-shaped. *Fruit-stalks* surrounded at the top with a sort of outer calyx, which is cloven into five spear-shaped irregular segments, hairy at the edges and the outside. Within this the fruit-stalk is covered with white upright bristles, above which again is a circle of numerous green awns hooked at the end, and within these, the proper calyx of five leaves, spear-shaped, concave, glandular without, within marked with three deeper green lines, terminating in a reddish point. *Petals* egg-shaped, concave, very slightly notched at the end, twice as long as the cup. *Stamens* five to twelve. *Germen* crowned with the calyx, and a yellowish fleshy receptacle. *Styles* thread-shaped. *Summits*, two thin lips at the end of each style. *Capsule* egg-shaped, hairy,

* Hornbeam loves a poor stiff soil, on the sides of hills ; is easily transplanted, and bears lopping, (from which practice it suffers such general mutilation that it is rare to behold a perfect tree. E.) In 1764, in Lord Petre's park at Writtle in Essex, stood a Hornbeam tree, measuring full twelve feet in girth, at five feet above the ground. Bath. Soc. vol. i. Mr. Marsham. Cattle eat the leaves, but pasturage will not flourish in its shade. The wood burns like a candle, being highly inflammable, as was well known to the ancients ;

“*Carpinus tædas fissâ facesque dabit.*” E.)

It is very white, tough, harder than that of hawthorn, and capable of supporting a great weight. It is useful in turning, and for many implements of husbandry, (especially celebrated for yokes for coupling oxen, and therefore designated *jugia, jugæ*, (q. d. *conjugalis*), by the Greeks and Romans. E.) It makes cogs for mill wheels, even superior to yew. The inner bark is much used in Scandinavia to dye yellow. *Phalana brumata* and *rostralis*, (as also *Livia (Coccus) Carpini*, E.) feed upon it.

(The superior excellence of Hornbeam lies in its fitness for screen-fences for sheltering gardens, nurseries, and young plantations from the severities of the winter season. It may be trained to almost any height, and by keeping it trimmed on the sides it becomes thick of branches, and consequently thick of leaves, which being by their nature retained upon the plant after they wither, a Hornbeam hedge produces a degree of shelter nearly equal to that of a brick wall, (with the advantage of a better regulated temperature. E.) Treatise on Planting. It was long in great request in France, Holland, and England, for the construction of mazes, alleys, labyrinth and “arching shades,” adopted in the ancient style of gardening ; but since the decline of topiarian taste, the lavish eulogium of Evelyn is scarcely applicable, and we have no longer the enjoyment of the most effectual *umbraculum frondium*. In some parts of Germany, properly pruned, it makes an impenetrable fence against cattle. As underwood it affords stakes, edders, and charcoal. E.)

† From *αγρος*, a field ; and *μωω*, to inhabit ; its usual station being in corn-fields. E.)

ribbed. *Seeds* nearly egg-shaped, flattened on one side. *Flowers* in long, upright, terminal bunches; fine yellow.

AGRIMONY. (Irish : *Murgrachin* ; *Scahog Muire*. Welsh : *Tryw* ; *Trydon* ; *Caliwlyn y mel*. E.) Borders of corn-fields, shady places, and hedges. P. June—July.*

TRIGYNIA.

FAGUS.† B. and F. flowers on the same plant : *Bloss.* none.

B. *Calyx* five-cleft ; bell-shaped : (*Stam.* about twelve. E.)

F. *Calyx* with four teeth, changing into a prickly four-valved, two-seeded capsule.

F. SYLVATICA. Leaves egg-shaped ; smooth ; indistinctly serrated ; (fringing at the edge. E.)

(*E. Bot.* 1846. E.)—*Erck.* p. 136. i. p. 132. *Ed.* ii.—*Matth.* 205—*Ger.* 1255—*Dod.* 832—*J. B.* i. b. 118—*Lonic.* i. 33. 1—*Spect. de la Nat.* ii. 29. 1. at p. 290—*Nat. Delin.* ii. 19. 1. at p. 312.

(A large spreading tree, with branches frequently assuming horizontal strata. *Bark* smooth, greyish. E.) *Leaves* shining, waved, scarcely serrated, finely fringed. (*Calyx* of the fruit ovate, silky, mucated with simple pliant prickles. E. Bot. E.)

BEECH TREE. (Welsh *Pfawydden*. E.) Woods and hedges especially in a calcareous soil. T. March—April.‡

* The Canadians are said to use an infusion of the root in burning fevers, with great success. An infusion of six ounces of the crown of the root, in a quart of boiling water sweetened with honey, and half a pint of it drank three times a day, Dr. Hill says, is an effectual cure for the jaundice. He advises to begin with an emetic, afterwards to keep the bowels soluble, and to continue the medicine as long as any symptoms of the disease remain. (The leaves may be used, for medicinal effect, as tea, and are not disagreeable. This plant has long been recommended in scorbutic disorders, in debility and laxity of the intestines, &c. Digested in whey, it affords a useful diet-drink, for the spring season, not ungrateful to the palate or stomach. Dr. Alston prefers administering the herb in powder, when the intention is to corroborate; and if thus taken in large quantity, he expects it will cure ague. E.) Sheep and goats eat it. Cows, horses, and swine refuse it. Linn. The flowers, fresh gathered, smell like apricots.

† (From *φρυα*, to eat ; the fruit of this glandiferous tree being acceptable to man and beast ; though it may be inferred from a note of the critic Palmerius upon Theophrastus, (an opinion confirmed by Pausanias), that the ancient *φρυα*, meant not the Beech, but a kind of oak, altogether dissimilar. E.)

‡ This tree is large and beautiful, but no verdure will flourish under its shade, (however refreshing to the weary shepherd—

“Lentus in umbra,”
“There at the foot of yonder nodding Beech,

His listless length at noon-tide would he stretch.” E.]

(CASTA'NEA.* B. and F. flowers on the same plant: Bloss. none

Whilst young it is apt to suffer from exposure. It is difficult to transplant. It retains its old leaves through the winter, (and in young plants till pushed off by the new ones in spring. E.) It bears lopping well, and (planted in palisade, E.) may be trained to form very lofty hedges, (for skreens, little inferior to the Hornbeam, or Dutch Elm. E.) The wood is brittle; soon decays in the air, but endures long under water, (and by maceration may be rendered less susceptible of injury from exposure. E.) It is formed into tool handles, planes, large screws, sounding boards of musical instruments, mallets, chairs, coffins, and bedsteads, (but does not make lasting utensils or furniture, being the favourite nidus for the larvæ of *Ptinus pectinicornis*, whose eggs are deposited on the surface, when the worms eat their way in. In their holes they turn into pupæ, and come forth winged in July, eating through whatever obstructs their passage. E.) Split into thin layers it is used to make scabbards for swords, (band boxes, and in the black-letter age, book covers. Floats for nets, instead of cork, are made of the bark. E.) It is excellent fuel, and when burnt affords a large quantity of pot-ash. (It produces a clear, lively fire, fit for chambers. The 'Buis d'Andelle' burnt in the genteel houses in Paris, is almost entirely Beech. The leaves, gathered in autumn, before they are much injured by the frosts, make better mattresses than straw or chaff, and last for seven or eight years. The nuts, or mast, as they are called, when eaten raw, occasion giddiness and head-ach; but when well dried and powdered make wholesome bread. They are sometimes roasted and substituted for coffee. They fatten swine (and deer, but the fat so produced boils away, unless hardened by some other food, E.) and are greedily devoured by mice, squirrels, and birds, (attracting innumerable flocks of wood pigeons, &c. E.) The poor people in Silesia use the expressed oil instead of butter; (it is also fit for lamps. E.) Sheep and goats eat the leaves. (Mr. Oade Roberts reports that much less permanent injury is done to this timber by lopping with the axe, than with the saw. E.)

(On the inferior surface of the leaves of Beech may be frequently observed in summer, *Erynem fagineum*; Grev. Scot. Crypt. 250. "Hypophyllous, spot-like, somewhat immersed, granulose, dense, at first white, at length rich brown; peridia clavate, turbinate." On the branches in spring *Stilbospora profusa*; Grev. Scot. Crypt. 212. "Heaps rather large, the sporidia extremely minute, nearly equally two-celled." See likewise a further illustration in Journ. Nat. (Pl. v. f. 4.) where several minute parasites are cited as instances wherein these weak instruments are made use of to accelerate the decay and dispersion even of vegetable giants. E.) *Phalana Populi*, *Coryli*, *padchunda*, *Curtia Fagi*, *Scarabeus Melonantha*, *Aphis Fagi*, feed upon this and the Chesnut. Linn. In some parts of Hertfordshire, where the soil is a strong clay full of flints, Beech trees grow to a very large size, and are of extreme beauty. They do not relish a light soil. No tree is more beautiful when standing singly in parks or pleasure grounds than the Beech, as it throws out its branches very regularly, and feathers almost to the ground. In woods or groves it grows clear of branches to a great height. Mr. Woodward. (The beautiful variety with blood red or purple foliage may be propagated by engrafting on the common stock, and is highly ornamental in the shrubbery. In respect to the Beech we cannot but differ from the most classical authority on forest scenery, who would degrade both the appearance and utility of this tree. We must in truth agree with another writer that in stateliness and grandeur of outline, the Beech vies with the Oak. Its foliage is peculiarly soft and pleasing to the eye, (in early spring preëminently so both in colour and texture); its branches are numerous and spreading, here aspiring in airy lightness above the general mass, and there gracefully feathering to the ground; its stem waxed to a great size, nor, for picturesque effect, covered with moss, (the favourite baunt of the dormouse), does any other tree

— "Write its old fantastic roots so high."

And in studying the Beech tree, we have occasionally observed, not merely an extraordi-

* From *Kastris*, a town in Thessaly, the neighbourhood of which abounds with these trees. In Latin, *Castanea*; Italian, *Castagno*; Spanish, *Castano*; French, *Chatagnier*; and English, (in declension, and by the more ancient orthography) *Chestnut*. E.)

B. Catkin naked: *Cal.* five or six-cleft: *Stam.* ten to twenty.

nary intertwining of the branches, but in some instances, an actual growing into each other;

"Huge trunks! and each particular trunk a growth
Of intertwined fibres, serpentine,
Up-coiling, and inveterately involv'd." Wordsworth.

The bark is remarkably even and silvery, which, added to the splendour and smoothness of its foliage, gives a striking delicacy to its appearance. The Beech, therefore, standing singly, and suffered to form its own natural head, is highly ornamental; and its leaves varying their hue, (to the richest shades of brown), as the autumn approaches, renders it still more desirable. Gilpin describes the spray of the Beech as observing the same kind of alternacy as that of the Elm: but it shoots in angles still more acute—the distance between each twig is wider, and it forms a kind of zigzag in its course. No bark tempts the lover so much to make it the depository of his mistress's name. It conveys a happy emblem;

—————"Crescent illæ; crescetis amores;"

As the letters of our names increase, so may our love.

To which practice Virgil makes other allusions: and nearly the same beautiful idea is preserved in the epistle of *Ænone* to Paris:

"Incisæ servant a te mea nomina *Fagi*:
Et legor *Ænone* falce notata tua.
Et quantum trunci, tantum mea nomina crescent:
Crescite, et in titulos surgite recta meos." Ovid.

But no poet, ancient or modern, amplifies this occasion more successfully than our own Thomson, in the episode of *Damon* and *Musidora*; not even *Sannazaro* in his *Arcadia*, whose hero wrote his mournful song "in una verde corteccia di *Faggio*:" in an age too, when

"Not a *Beech* but bore some cipher,
Tender word, or amorous text."

This custom of carving favourite names on the bark of trees, probably originated in the simplicity of nature, and consequently, in the opinion of Dr. Hunter, must have been common to all ages. "A man haunts the forest that abuses our young trees with carving "*Rosalind*" upon the bark." Shaks. Nor hath Campbell neglected to avail himself of the argument in his elegant and feeling appeal in behalf of the Beech tree.

"Thrice twenty summers I have stood
In bloomless, fruitless solitude—
Since childhood in my rustling dover
First spent its sweet and sportive hour—
Since youthful lovers in my shade
Their vows of truth and rapture paid;
And on my trunk's surviving frame
Carv'd many a long-forgotten name:
Oh! by the vows of gentle sound,
First breath'd upon this sacred ground;
By all that love hath whisper'd here,
Or beauty heard, with ravish'd ear;
As love's own altar honour me,
Spare, woodman, spare the *Beech* tree."

Gilpin admits Virgil to be "right in choosing the Beech for its shade. No tree forms so complete a roof. If you wish either shade, or shelter, you will find it best

—————"Patula sub tegmine *Fagi*."

—————"Patula sub tegmine *Fagi*." ————
In classed some beautifully descriptive passages on this subject:

DODECANDRIA. TRIGYNIA. CASTANEA.

F. *Cal.* five or six-leaved, prickly: *Germ.* three: *Stigm.* awl-shaped: *Nuts* three, invested with the alyx. E.)

“The sun, from rosy billows risen, had rayed
With gold the mountain tops, when at the foot
Of a tall *Beech* romantic, whose green shade
Fell on a brook, that, sweet-voiced as a lute,
Through lively pastures wound its sparkling way,
Sad on the daisied turf *Salicio* lay.”

And again,

“Under the branches of the *Beech* we flang
Our limbs at ease, and our bent bows unstrung.”

In actual utility the *Beech* follows next to the *Oak* and *Ash*, exceeding the latter in dimensions: it is as necessary to the cabinet-maker and turner as the *Oak* is to the ship-builder, or the *Ash* to the plough and cart-wright. Its defect is being obnoxious to the worm. It thrives in crowded thickets; indeed, so encouraging is its nature, that it will ultimately prevail against its powerful antagonist the *Oak*. Nothing daunted, it occasionally braves the war of elements in the most exposed situations: where

“The *Beech* that scales the welkin with his top,”

exhibits almost a preternatural magnitude in the distant horizon, apparently, with distance, enlarging upon the eye: and of such the Frankley Beeches, Worcestershire, so conspicuous for many miles around, are remarkable instances. The natural soil and situation of the *Beech* is upon dry, chalky, or limestone heights; it attains to a great size upon the hills of *Surry* and *Kent*; as also upon the declivities of the *Cotswold* and *Stroudwater* hills in *Gloucestershire*; and flourishes exceedingly on the bleak banks of the *Wye*, in *Hereford* and *Monmouthshires*; where it is much used in making charcoal. In situations like those, and where it is not already prevalent, the *Beech*, whether as a timber tree or as underwood, is an object worthy the planter's attention. In the “*Arctic Zoology*” is described, on an island of the lake *Wetter*, and about the extreme range of these trees northward, a majestic plant called the *Twelve Apostles*, from its dividing into as many great stems. Only eleven of these are now standing, for some years since a zealous peasant cut down one of them, declaring that the traitor *Judas* should have no part with his brethren. The names of many distinguished visitors are recorded on the bark of this surpassing tree, among which are those of *Charles XI* and *XII*, *Queen Eleonora*, &c. Of British growth a notable one may be seen in *Knole Park*, *Kent*, measuring one hundred and five feet in height, at three feet from the ground, twenty-four feet girth, and containing four hundred and twenty-eight feet of solid timber; as depicted in *Strutt*. Evelyn considered this tree deserving of an elaborate treatise, which his learned commentator has enlarged. *Cæsar* denied the existence of the “*Fagus*” in *Britannia*, but we apprehend he must, by that term, (*more antiquorum*), have intended some other kind of tree. *Cowley*, alluding to its various applications, represents,

— “*Sellas, armaria, lectos,*
Et mensas dabat, et lances, et pocula Fagus.”

Happy times! when,

“The *Beechen* bowl without debauch went round,
And was with harmless mirth and roses crown'd.
'Twas not that airy virtue in the wood
Against the baneful liquor was thought good
But poverty and innocence were here.
The antidotes against all ill and fear.”

Of old, the *Vasa Viniducatoria* and *Cordes Messoria*, (as are our little pottles for strawberries), were made with the rind: and that curiously wrought cup, which the shepherd describes in the *Bucolics*, as engraven by *Alcimedon*;

— “*Pocula posant*
Fagus, celatum divini opus Alcimedontis.”

(C. VRS'CA. E.) Leaves spear-shaped, with tapering serratures, naked beneath.

Even vessels consecrated to religious ceremonies, according to Pliny, were sometimes carved out of this wood, though its use was generally plebeian,

"Terra rubens crater, pocula *Fagus* erant." Ovid.

For depth of solemn shade the extensive Beech wood is not less impressive than the Oak grove; nor are the grey smooth trunks, far as the eye can reach, like stately columns, glancing a partial stream of light, or dimly lost in distance, less calculated to inspire a reverential awe.

"There oft the Muse, what most delights her, sees
Long living galleries of aged trees;
Bold sons of earth, that lift their arms so high,
As if once more they would invade the sky.
In such green palaces the first kings reign'd,
Slept in their shades, and angels entertain'd:
With such old counsellors they did advise,
And, by frequenting sacred groves, grew wise.
Free from the impediments of light and noise,
Man, thus retir'd, his noblest thoughts employs."

In the cavities of these trees bees delight to hive themselves. Where the worm has made depredations, sponge with oil of spike. This wood may be blacked and polished to resemble ebony. The ancients who commended it for powerful purposes, as Ricciolus for oars, and Apollonius as constructing the vast Argo, and Claudian for ships also,

— "Fagos metitur,"

must surely have meant some less perishable material. The fruit has supported even men; Chios is said to have endured a memorable siege by the benefit of this mast: but here again we may question the identity of the tree. When, however, we consider the agreeable canopy this tree presents in summer, and the comfortable mattresses afforded by the leaves for winter repose, (as used in Dauphiny and Switzerland), we may, without hesitation, hail the

— "Silva domus, cubilia frondes."

And although we have refused assent to the repudiation of the Beech, we freely concur in the moral strain of the pious Vicar of Boldre, a portion of which, alluding to the fall of the leaf, we cannot refrain from here introducing;

"Ut sylvæ foliis pronos mutantur in annos;
Prima cadunt; ita
Debemur morti nos nostraque."

"These naked shoots
Batten as lances, among which the wind
Makes wintry music, sighing as it goes,
Shall put their graceful foliage on again,
And more aspiring, and with ampler spread,
Shall boast new charms, and more than they have lost.
Then, each in its peculiar honours clad,
Shall publish even to the distant eye
Its family and tribe.

These have been, and these shall be in their day,
And all this uniform, unclouded scene,
Shall be dismantled of its fleecy load,
And flush into variety again." Cowper.

"How does every thing around us bring its lesson to our minds! Nature is the great book of God. In every page is instruction, to those who read. Mortality must claim its due. Death in various shapes hovers round us. Thus far went the heathen moralist. He had learned no other knowledge from these perishing forms of nature, but that men, and trees, are subject to death."

(*E. Bot.* 886. *E.*)—*Kniph.* 5—*Hunt. Evel.* p. 159. 1. p. 153. *Ed.* ii.—*Mill.* 84—*Tourn.* 352—*Nat. Disp.* ii. 30. at p. 290—*Nat. Delin.* ii. 19. 3. at p. 312—*Matth.* 211—*Dod.* 814. 1—*Lob. Ic.* ii. 160. 2, and *Obs.* 588. 1—*Ger. Em.* 1442. 1—*Park.* 1400. 1—*J. B. i. b.* 121—*Gars.* 204—*Ger.* 1253. 1—*Blackw.* 330—*Fuchs.* 377—*Trag.* 1100—*Lonic.* i. 31. 1.

(A forest tree of the largest dimensions, with deeply left bark. *E.*) *Leaves* ending in a very long taper point; serratures in a kind of thorn. *Woodw.* (Prickles of the outer *calyx* compound and entangled. *Sm.* *E.*)

SPANISH CHESNUT TREE. (Welsh: *Castanwydden*; *Satuen.* *Fagus* *Castanea.* *Linn.* *Castanea vulgaris.* *De Cand. Hook. Grev.* *C. vesca.* *Gert. Willd.* The former specific name we reject, as inapplicable to the existing state of the tree in this country: the latter we adopt, as descriptive of its edible fruit. *E.*) Woods and hedges, in Kent, common. Burleigh Park, in great abundance. Mr. Woodward. (In Anglesey. *Welsh Bot. E.*) Banks of the Tamer, Cornwall; and at Beckworth Castle, Surry, are many fine ones. T. May.

— “Ita
Debemur morti nos, nostraque.”

“Better instructed, learn thou a nobler lesson. Learn that that God, who with the blast of winter shrivels the tree, and with the breezes of spring restores it, offers it to thee as an emblem of thy hopes. The same God presides over the natural, and moral world. His works are uniform. The truths which *Nature* teaches, as far as they go, are the truths of *Revelation* also. It is written in both these books, that that power, which revives the tree, will revive thee also, like it, with increasing perfection.” *Forest Scenery.* vol. i. p. 103. *E.*)

* (The Chesnut may well be considered as one of the most stately of European trees, exceeding the oak in height, and equalling it in bulk and extent. “Being planted in avenues to our country-houses, they are a magnificent and royal ornament; and although our Englishmen delight not so much in the fruit as other nations, yet will they yield no small advantage to supply our other occasions.” *Syst. Ag.* The foliage exhibits a more marked character than that of the oak, being formed into stellate clusters, glossy, less liable to depredations from insects, and peculiarly elegant when surrounded by the florescent catkins. “This is the tree,” observes Gilpin, “which graces the landscapes of *Salvator Rosa*. In the mountains of Calabria, where *Salvator* painted, the Chesnut flourished. There he studied it in all its forms, breaking and disposing it in a thousand beautiful shapes, as the exigencies of his composition required. I have heard, indeed, that it is naturally brittle, and liable to be shattered by winds; which might be one reason for *Salvator*’s attachment to it.” Previous to sowing it, *Evelyn* advises, to “cover the nuts with sand; a month being past, plunge them in water and reject the swimmers: being dried for thirty days more, sand them again, and to the water or soil as before.”—“I counsel you to infer them in their husks, which, being every way armed, are a good protection against the mouse, and a providential integument. *Pliny*, lib. xv. chap. xxiii. from this natural guard, concludes them to be excellent food: and doubtless *Cæsar* thought so, when he transported them from *Sardinia* first into Italy, whence they were propagated into France, and thence among us.” Whether the Chesnut may be accounted an aboriginal of the British Isles, (more generally diffused previous to that deterioration of climate which may be inferred since the flourishing vineyards described by *Tacitus*), or merely introduced at a remote era, as above surmised, has long perplexed the most experienced dendrologists. Several controversial epistles on this subject, between the *Hon. Daines Barrington* and *Dr. Ducarel*, were read before the Royal Society in 1771; but the question admits of no very satisfactory solution. There is certainly no indication of the Chesnut ever having prevailed in North Britain, nor has it latterly been observed in the southern portion of the island, except in parks and artificial plantations: “The deed of gift by *Henry II.* to *Flaxley Abbey*, of the tythe of all his Chesnuts in the Forest of Dean, appears to us far from conclusive; as it appears not at all improbable that such trees, introduced at a much earlier period, might have been planted and protected in that royal preserve; the interval between the final reduction of Roman power, and the reign of the first of the Plantagenets, being at least seven centuries. Striped and lacinate varieties of

A cultivated variety with larger and more glossy leaves, and six to nine pistils to each seed-vessel, is said to bear fruit earlier and of a larger size. Stackh.

the Chestnut may be obtained at the nurseries. No kind of forest tree contributes more gorgeously to the splendid array of autumn than does this truly noble vegetable, when

— "Fall'n into the sear and golden leaf."

For delineations of this species of tree we again refer to Strutt's 'Silva Britannica,' where, among others, is given a fine representation of one growing in Cobham park, which measures 33 feet at 12 feet from the ground, and 40 feet where the trunk divides. Every such individual is in itself a grove, which should be held sacred, if not as the abode of a sylvan deity, for more rational considerations.

"Hail, old patrician trees, so great and good!

Hail, ye plebeian underwood,

Where the poetic birds rejoice,

And for their quiet nests and plenteous food

Pay with their grateful voice." Cowley. E.)

Nothing will thrive under its shade. The wood is applicable to the same uses as that of Oak, (but less valuable, as it is apt to be *shaky* and given to separate. Notwithstanding it is sought for the purposes of cooorage and water pipes, not being liable to shrink after it is once seasoned :

— "Staves that nor shrink nor swell

The cooper's close-wrought cask to *Chestnut* owes." Dodsley.

Nor to change the colour of the liquor it contains. Dr. Hunter affirms that posts made of this tree are more durable than oak. E.) If the bark be not taken off, it makes poles for espaliers, dead fences, and hop yards, and pipes to convey water under ground, which will last longer than those of Elm or Oak. (The bark being powerfully astringent is excellent for tanning. E.) At Tortworth, in Gloucestershire, is a tree 52 feet round. It is proved to have stood there ever since the year 1150, and was then so remarkable as to be called the Great Chestnut of Tortworth. It fixes the boundary of the manor, and is probably near 1000 years old. Vid. Gent. Mag. 1766, p. 321, where there is a drawing of it, also etchings in the works of Martyn and Lysons. Mr. Marsham measured this tree in the year 1759, at the height of six feet from the ground, where its girth was 46 feet 6 inches. He calculates that it cannot be less, probably much more, than 1100 years old, and that it was 540 years old when John came to the throne, and would then measure 11 yards in circumference. Tr. Bath Soc. vol. 1. (The Editor visited the venerable ruin in 1792, when its decaying trunk was still surmounted by a few verdant branches, which on a second view, after an interval of a quarter of a century, had rather increased in vigour than otherwise. Mr. Collinson makes no doubt of the Chestnut being a native of England, and assigns the great profit that arises from them when cut for hop-poles, as the reason why it is so rare to see large-trees in the woods. Many of the old buildings in London prove it to have been in use at an early period, yet not so remote as to refute the idea of its having been either introduced and subsequently matured in this country, or imported for these special purposes; and, according to Fitz-Stephen, (temp. Hen. II.) a forest of Chestnuts extended around the north side of the metropolis. The beautiful roof of Westminster Abbey, and that of the Parliament House, Edinburgh, are constructed of this material. E.)

The nuts are used for whitening linen cloth, and for making starch. They are roasted on small stoves in the streets by fruit women in the south of Europe, and there constitute a great proportion of the food of the common people. In winter they form a very agreeable addition to our desserts. (Virgil describes them as acceptable fare with milk and cheese.

— "Sunt nobis ———,

Castanæ molles, et pressi copia lactis." Eel. i.

And, in his second Eclogue, represents them among the delicacies proffered to win the regard of fair Alexis,

"*Castanæque nuce, mea quæ Amaryllis amat.*"

"Then, with the downy quince, and *Chestnuts* sweet,
Which once my Amaryllis lov'd, I'll greet."

RESEDA.* *Calyx* one leaf, divided : *Petals* jagged : *Capsule* one-celled, many-seeded, opening wide at the top.

R. LUTEO'LA Leaves spear-shaped, entire, with a tooth on each side the base : calyx four-cleft.

(E. Bot. 320. E.)—*Kniph.* 5—*Fl. Dan.* 864—*Sheldr.* 93—*Trag.* 362—*Lonic.* 155. 4—*Ger.* 398. 1—*Matth.* 1307—*Dod.* 80—*Lob.* Obs. 190. 3—*Ger. Em.* 494—*Park.* 603. 1—*Pet.* 38. 12—*Blackw.* 283—*J. B.* iii. 405. 2.

Stems cylindrical, hollow, furrowed, (about a yard high, terminating in a long naked spike of yellowish green flowers. E.) *Leaves* strap-spear-shaped, with a very minute reddish tooth on each side of the base ; (the young leaves often undulated. E.) *Floral-leaves* one at the base of each flower. *Calyx* segments four, spear-shaped, the two upper wide asunder. *Petals* three, the upper hand-shaped, with four divisions ; the two lateral ones oblong, sometimes cloven. *Nectary* broad, somewhat hollowed on the outer side at the base, which is covered by a thin concave lid, formed by an expansion of the claw of the upper petal. *Stamens* twenty to thirty, or more. *Germen* pyramidal, three-sided, angles blunt. *Styles* none ; (3. Sm. E.) *Summits* three. *Capsule* with three valves, rolled inward so as to enfold the seeds.

DYER'S-WEED, OR ROCKET. YELLOW-WELD. WELD. (Irish: *Buigh Mor.* Welsh: *Melengu*; *Cynffon titiw.* E.) Meadows, pastures, walls, and barren uncultivated spots, (especially in stone quarries, and on the rejected rubbish of limekilns. E.) Coal-pit banks in Staffordshire and Shropshire, and about the ruins of Dudley Castle. Mr. Swayne observes, that it is

Various are the modes of preparing this fruit for the table, as related by Evelyn, who adds "Bread of the flour is extremely nutritive ; it is a robust food, and makes women well complexioned. In Italy they also make fritters of Chesnut flour, which they wet with rose-water, and sprinkle with grated parmigiano, and so fry them in fresh butter for a delicate. How we here use Chesnuts, in stewed meats and beattile pies, our French cooks teach us ; and this is in truth their very best use, and very commendable." At the Cape of Good Hope, Thunberg tells us they are usually roasted with butter, probably a Dutch custom.—Roasted Chesnuts formerly accompanied the wassail bowl at our Christmas festivities : and Milton, while deploring the death of his friend Deodati, and lamenting the few resources of his lonely habitation, to

"Cheat the wintry night,"

thus alludes to their more ordinary domestic use,

"While hisses on my hearth the pulpy pear,
And blackening Chesnuts start and crackle there."

Deer are fond of Chesnuts, hence they are sometimes called *Buck-mast.* E.) The flesh of hogs feeding on them as they run wild in the forests, is reckoned particularly excellent (Mount Etna is famous for the production of enormous Chesnut trees, scattered over its side, particularly those of the Seven Brethren, the Ship, &c.; probably the largest in the known world, is that reported by Mr. Houel to be 160 feet in circumference, and capable of sheltering one hundred horse-men ; hence called *Castagna di Cento Cavalii*; represented in *Encyc. Brit.* pl. 185. It is hollow within, and contains a house and even used for drying chesnuts, almonds, &c. In the north of England these trees withstand the winter frosts tolerably well in sheltered situations, but from the want of continuance of sufficient heat during the summer, rarely bring their fruit, which is occasionally formed, to perfection. Winch. Geog. Distr. E.)

*This name occurs in Pliny, and is supposed to be derived from *resedo*, to alloy &

one of the first plants that grow on the rubbish thrown out of coal-pits. It is very common in Gloucestershire by the sides of roads, and also about Manchester; probably as Mr. Caley thinks, from scattered seeds from the dye-houses. (Between Crosby and the sea, near Liverpool. Dr. Bostock. Common on waste ground in Norfolk and Suffolk, in places where none was ever grown for the dyers. Mr. Woodward. Near New Inn, and opposite Mr. Penrice's house, Salford, near Alcester. Purton. On the point near Beaumaris. Welsh Bot. Road sides around Edinburgh. Dr. Greville. Between Shaldon and Ringmore, near Teignmouth. E.) A. June—July.*

R. LU'TEA. All the leaves three-cleft: the lower winged: calyx six-cleft. E.)

* * This plant affords a beautiful yellow dye for cotton, woollen, mohair, silk, and linen, and is that which is most commonly used for that purpose, as it gives the brightest tint. Blue cloths dipped in a decoction of it become green. The yellow colour of the paint called Dutch Pink, is obtained from the same source. The tinging quality resides in the stems and roots, and it is cultivated in sandy soils, rich soil rendering the stalk hollow and not so good. (Weld is commonly produced with very little trouble, but both quantity and quality may be improved by a better system of culture.—It foreigners derive sufficient encouragement to import it, (as into Bristol from France, and it sells in that city for ten shillings per cwt. in a dry state: Journ. Nat.) notwithstanding the charges of freight, port duties, and various consequent expenses, why can it not be grown with us, and afford superior remuneration, not having such deductions to diminish the profits? It is usually sown with barley or oats, the reaping of which does no material injury; but it may be worth while to treat it as a separate crop, ploughing and harrowing well, sowing the seed in August; in about two months hoe, and again in March and May. About the close of June, when the flower is in full vigour, the plant should be carefully pulled, a sufficient quantity of stems being left for seed till September. Thus may be obtained a very large produce per acre, which should be treated as flax, set up in small handfulls to dry in the field, tied up in bundles and doused dry, being careful to stack it loosely, that the air may pass between and prevent fermentation. The crop being so early removed, the ground may be conveniently prepared for wheat the same season. Among a great number of authors whom we have consulted, Miller alone suggests this to be the plant with which the ancient inhabitants of this island painted themselves, and not the Woad, as has been supposed; for the Dyer's-weed is a native here, whereas the Woad has been since introduced into this country." This obscure subject is never likely to be satisfactorily illustrated, however interesting be the inquiry. It is next to impossible to carry the synonyms correctly through the more ancient authorities. Where next to no classical descriptions are given, to identify the plants in use for particular purposes eighteen centuries ago, requires a more penetrating acumen than the most expert naturalist will pretend to. That Weld may have been, as a wild plant, much more abundantly procurable than Woad, (though we are not inclined to deny the latter being indigenous), seems probable, and therefore the more likely to attract the attention of a barbarous people; but that these savages more obviously stained themselves of other colours than yellow, we are unquestionably assured, (vid. Plin. lib. xxii. c. 1. "*Æthiopum colorem imitantes*;" &c.) so that if Weld was applied to such a purpose, it could not have been exclusively so, but probably, in combination with other ingredients, and from the consonance of the names Weld, Wold, (as sometimes spelt), and Woad, we could imagine the term to be rather general than specific. The most ancient classical names of what we now designate Weld, are descriptive of its yellow dye, as Pliny, lib. xxxiii. cap. 5, *Lutea*; (a) Vitruvius, lib. vii. *Lactum*; and likewise Virgil in his fourth Eclogue. The name of *Wild Woad* has also been given to this plant, which tends but to increase the confusion, as connecting it with a totally distinct herb, *Isatis tinctoria*, which see. *E.) Cattle will not eat it, but sheep sometimes browse it a little. (*Hylæus anthracinus* is found upon it.

Dicks. H. S.—(*E. Bot.* 321. E.)—*Jacq. Austr.* 353—*Ger.* 216. 1—*Lob. Adv.* 76—*Ger. Em.* 277. 1—*Park.* 823. 2—*Pet.* 38. 11—*J. B.* iii. 467.

(*Stems* about two feet high, bushy. E.) *Calyx* segments six, strap-shaped, the uppermost the smallest. *Petals* six. *Stamens* twenty. *Relh.* *Flowers* pale yellow, (their *stalks* longer than those of the preceding. E.)

BASE ROCKET. Corn-fields, meadows, pastures, chiefly in calcareous soil; sometimes on walls. On a wall at Clifton, near Bristol. Mr. Swayne. Between Sunderland and South Shields. Mr. Robson. (Norfolk and Suffolk, on chalky soil, frequent. Mr. Woodward. Hills between Pettycur and Burnt Island. Mr. Neill. *Grev. Edin. E.*) A. June—Aug.*

Var. 2. *Fol. crisp.* Curled-leaved.

Bocc. Pl. Var. 41. 3. at p. 76—*Pluk.* 55. 4.

Barren closes, about Roe Hill and Northfleet. (At Walderswick, Suffolk. Mr. Woodward. E.)

Ray considers this a perennial, and therefore a distinct species. *R. lutea* is not an uncommon plant in Portugal; and in all the specimens I saw there the leaves were curled, but by the most attentive examination I could discover no other difference.

EUPHORBIA. *Calyx* monophyllous, distended: *Bloss.* four or five petals, (or nectaries), inserted on the calyx: *Caps.* three, united.

(1) *Flowers* solitary.

E. PEPLUS. Forked. leaves very entire, half-heart-shaped: flowers solitary or axillary: stems trailing: (capsule smooth. E.)

(*E. Bot.* 320. 2—*Clus.* ii. 187. 2—*Lob. Obs.* 197. 3—*Ger. Em.* 503. 20—*H. Ox.* x. 2. 18—*Pet.* 53. 12—*Matth.* 1269—*Ger.* 406. 16—*Park.* 1206)

Plant generally red or purple, rather glaucous. *Stem* forked immediately from the root (nine to twelve inches long. E.) *Branches* trailing, forked of irregular lengths. *Flowers* on fruit-stalks. *Capsules* tipped with purple. *Woodw.*

PENZANCE SEURGE. Sandy sea-shores. Between Penzance and Market Drayton, Cornwall; Exmouth, Devon. (Between Torquay and Paington, for Bay Mr. Cullen. *E. Bot.* Shore at Aberystwith. Mr. T. F. Forster, *Jun. Bot. Guide.* E.) A. July—Aug.

(2) *Umbels* with three spokes.

E. PEPLUS. Umbels three-branched, forked: bractæ egg-shaped: leaves very entire, inversely egg-shaped, on leaf-stalks: (nectaries crescent-shaped: seeds dotted. E.)

Curt.—(*E. Bot.* 959—*Fl. Dan.* 1100. E.)—*Dod.* 375. 2—*Lob. Obs.* 197. 2—*Ger. Em.* 503. 19—*Park.* 194. 6—*H. Ox.* x. 2. 11—*Pet.* 53. 11—*Ger.* 406. 15—*Walc.*

* (The larva of *Pontia daplidice*, an elegantly chequered green and white butterfly, are in England, feeds on this species; as upon the various *Cruciferae*. *Vid. Curt. Brit. Entom.* v. 1. pl. 48. also *Mag. Nat. Hist.* v. 2. p. 228. fig. 61. E.)

(*Euphorbia*, of Dioscorides; named after Euphorbus, physician to Juba, King of Libya. *Vid. also Plin.* xxvii. 5. E.)

(Six to twelve inches high, sometimes tinged with purple, erect. E.)
Leaves alternate. *Umbel* spokes divided and subdivided into forks three and four times, the divisions wide apart. *Blossoms* yellowish green.

PETTY SPURGE. (Welsh: *Fflamgoed fechan*; *Llaeth y cythraul*. E.)
Rich cultivated soil. A. July—Aug.

E. EXIG'UA. Umbels three-branched, forked; bracteas spear-shaped: leaves strap-shaped: (nectaries bicornate: seeds wrinkled. E.)

Dicks. H. S.—(E. Bot. 1336. E.)—*Trag.* 296—*Curt.* 215—*Fl. Dan.* 592—*Ger.* 503. 17—*Park.* 193. 5—*Pet.* 53. 6—*H. Ox.* x. 2. 5.

(*Stem* erect, four to six inches high. *Leaves* erect, sessile. E.) *Plant* sometimes simple, upright, but in more luxuriant growth a pair of branches bearing three-spoked umbels, arise from the lower part of the stem. Terminal umbel sometimes with four or five spokes, generally twice forked, or more. *Involucrum* of two, three, or four leaves, sessile, bent back, more or less tapering to a point. *Involucellum* of two leaves, sessile, concave on one side. *Stamens* five to nine, swelling into a globular form close under the anthers. *Summits* six.

(*Authors* describe blunt and acute leaved varieties. Such fluctuating appearances have been remarked about Comberton Hill, Cambridgeshire, by Mr. Relhan; and on Trecastell farm, Pemnon, Anglesey, by Mr. Davies. E.)

DWARF SPURGE. (Welsh: *Fflamgoed ciddil ffaenfain*. E.) In gavelly corn-fields. A. July—Sept.*

(E. LATH'YRIS. Umbels four-branched, forked: leaves four-ranked, opposite, sessile, entire, heart-shaped at the base. E. Bot.

E. Bot. 2255—*Bull. Fr.* t. 103—*Fuchs.* 455—*Cam. Epit.* 968—*Ger. Em.* 503.

Herb of a dark, but glaucous green. *Stem* solitary, two to four feet high, upright, cylindrical, hollow. *Leaves* numerous, oblong, spreading, crossing each other in pairs. *Involucrum*s general and partial, heart-shaped, pointed. *Flowers* pale yellow, with tinges of purple about them and their stalks. *Capsules* large, smooth, when recent abounding with a virulent milky juice.

PER SPURGE. Certainly wild in several places in and near the parish of Upton, near Reading, springing up in dry, stony thickets periodically for a year or two after they have been cut, and still choked by briars. Rev. Dr. Beeke, Bot. Guide. On the declivities of the Steep Holmes, in the Severn. Dr. Gapper. E.) B. July. E.)†

(3) • Umbels with five spokes.

E. PARA'LIA. Umbels generally with five spokes, forked: bracteas heart-kidney-shaped: leaves tiled upwards, (concave: nectaries five: capsule nearly smooth. E.)

Leaves discharging orange-coloured seeds; also with *Uredo Euphorbiae*; "scattered, these, yellow." E.)

(The seed-vessels resemble caper-buds; hence its name. It is dangerous to use them for food, as is sometimes done, or even as pickle with the counteracting influence of

Jacq. Hort. 188—*E. Bot.* 195—*Dod.* 370. 1—*Ger. Em.* 498. 1—*H. Or.* x. i. 24—*Park.* 184—*Pet.* 53. 8—*Ger.* 401. 1—*Matth.* 1252—*Dod.* 370. 2.

Stems a foot high, numerous, ascending, thickly tiled with leaves, lower part generally red. *Leaves* smooth, fleshy, pointing upwards, gradually increasing in size from below; the lower ones strap-spear-shaped, or oblong, sessile, the upper ones oval-spear-shaped, half embracing the stem. *Fruit* very large, smooth. *Woodw.* The shortness of the *spokes* of the umbel, and the *leaves* pointing nearly upright, lying one over another so closely as to hide the stem, at once distinguish this from all its British congeners. When cultivated in a garden the leaves become more expanded.

(*Rev. H. Davies* describes a plant found in profusion below Llanbedrog, Llyn, Anglesey, much resembling *E. paralia*, but with leaves few, distant, linear, the uppermost patent, even horizontal; the lower ones reflexed; the lowest close to the stem. This that accurate observer suspects may prove a distinct species. *E.*)

SEA SPURGE. Sea shores. Between Southwold and Dunwich, Suffolk. Mr. Woodward. Cornwall. Mr. Watt. West side of Walney Isle. Mr. Atkinson. Dawlish, Devon. (Sand Hills about Formby, near Liverpool. Dr. Bostock. On Sunderland Ballast Hills. Winch Guide. Lydden Spout, near Dover. Mr. W. Christy. Maryport and Allonby, Cumberland. Hutchinson. Exmouth Warren, and at Torquay. *Rev. J. Pike Jones.* *E.*)
P. May—Sept.*

E. PORTLANDICA. Umbels with five spokes, forked: bracteas somewhat heart-shaped, concave: leaves strap-spear-shaped, smooth, expanding: (nectaries four: capsules rough at the angles. *E.*)

(*E. Bot.* 441. *E.*)—*Ray* 24. 6. at p. 479.

(Rather shrub-like, glaucous, smooth. *Stems* about a foot high, leafy, purple through the winter. *Leaves* an inch long, minutely pointed. *Seeds* dotted, reticulated. *E.*)

PORTLAND SPURGE. (Welsh: *Flamgoed y morgreigiau.* *E.*) Sandy sea-shores. On the neck of land joining Portland to Dorsetshire. Near Exmouth, Devonshire; and near Carnarvon; Cornwall. Mr. Watt. Lulworth Cove, Dorsetshire. (Scilly Islands. Dr. Forbes. On rocks at Perth Dafach, Holyhead; plentifully at Llanddwyn. Welsh Bot. *E.*)
A. May—Aug.

E. HELIOSCOTIA. Umbel with five three-cleft spokes, the divisions forked: bracteas inversely egg-shaped, leaves wedge-shaped, serrated: (nectaries four, undivided: capsul. smooth. *E.*)

Curt.—*Kniph.* 12—(*E. Bot.* 888. *E.*)—*Walc.*—*Pob. Obs.* 192. 2—*Ger. Em.* 498. 2—*Park.* 189—*H. Or.* x. 2. 9—*Fl. Dan.* 725—*Fuchs.* 811—*Trag.* 294—*J. B.* iii. 669. 1—*Ger.* 401. 2—*Pet.* 53. 10—*Lonic.* j. 98. 1—*Matth.* 1253.

(*Stem* slightly pubescent, about one foot high, often branched at the base. *Flowers* yellowish green; like most of its congeners lactescent. *E.*)

* (*Sphinx* (*Ptil.*) *Euphorbia*, an eminently beautiful Hawk-moth (so large as to be called the Elephant), flying about sun-set, darting from flower to flower, and hovering over the plant fragrant with its long proboscis extended to extract the honey deposited in the nectaries, appears to be intimately connected with this family of plants, and has been found on the present species, particularly at Appledore and Branton Burrows, near Barn-

588 DODECANDRIA. TRIGYNIA. EUPHORBIA.

SUN SPURGE. WART-WORT. (Welsh: *Llaeth ysgyfarnog*. E.) Common in cultivated places, as gardens and corn-fields. A. July—A.

(E. *STRICTA*. Umbel of about five three-cleft, thin, forked, branch leaves lanceolate, finely serrated: nectaries four, round entire: capsule warty: seeds smooth.

Fl. Græc. v. 5. t. 469.

Root zigzag. Herb light green, quite smooth, except a few occasional hairs on the rib of the leaves, or of the bracteas at the back. Stem erect six to fifteen inches high, straight, hollow, copiously leafy in the upper part, often naked and purplish below. Leaves spreading, or reflex scattered, sessile, acute, heart-shaped at the base; the lowermost often slightly stalked. Several branches, once or twice forked, spring from the upper leaves.

Var. 2. The same species in a starved condition. *E. stricta*. E. Bot. 3: (With. Ed. 3 and 4. E.) *E. verrucosa*. Huds. (With. Ed. 3. p. 44 Relh. E.) not of Linn. *Tithymalus verrucosus*. R. Syn. not of Bauhin or Dalechamp. In corn-fields, rare. In Essex; Mr. Dale; near York. Dr. Robinson. Ray. On the north side of Eversden Wood, Cambridgeshire. Rev. R. Relhan. Near Harefield, in 1793.

UPRIGHT WARTY SPURGE. *E. stricta*. Linn. Syst. Nat. Fl. Græc. *E. platyphylla*. Huds. Herb. D. Rose. Fl. Brit. *Tithymalus platyphyllos*. I Syn. Wild in Mr. Ray's orchard at Black Notley, Essex. R. Syn. Near Northfleet, Kent. Hudson. A. July—Aug. Sm. Eng. Fl. E.

(4) Umbels with six spokes.

E. HIBERNA. Umbels with six spokes, forked: bracteas ovate leaves obtuse: branches none: capsules warty, (erect: nectaries kidney-shaped, pointless. E.)

(*E. Bot.* 1337. E.)—*Dill. Elth.* 290. 374—*Kniph.* 9—*Clus.* ii. 190. 1—*Dod.* 372. 2—*Lo. Obs.* 196. 2—*Ger. Em.* 500. 12—*Park.* 188. 11—*Pet.* 53. 7—*H. Ox.* x. 2

Very milky. *Stem* two feet high, solid, leafy, nearly simple. *Leaves* two or three inches long, and one entire. *Umbel* large. *Nectaries* four, inversely kidney-shaped, purplish brown, with large, upright, paler scales. E.) *Umbel* sometimes with only five spokes. *Leaves* nearly strap-shaped, pointed. Solitary *fruit-stalks* frequently arising from the bosom of several of the upper leaves.

(**IRISH SPURGE.** M. L. LLOYD. In fields and thickets. Common in the county of Kerry. Dr. Wade. Near Belfast. Mr. Templeton. About the lake of Killarney. Rev. T. Butt. Doody's stations, in Dillenius, erroneous. Sm. E.) Between Feversham and Sittingbourne, Kent. Hudson. P. Aug.†

* (The inflorescence of this species is at least as acrid as that of its congeners, and when applied to warts much caution should be used to prevent its spreading, or more general inflammation may be excited. E.)

† (This herb, like others of its tribe, is not exempt from violent qualities. Its drastic effects have long been proverbial, and, according to the old fable, may be experienced tied about a man's clothes. Dr. Vaughan records a case in which an empiric gave it boiled in milk to a strong youth, near Clonmel, which excited a violent purgation and convulsion, as to occasion death in a few hours. E.)

(5) *Umbels with many spokes.*

E. ESULA. Umbel with many forked branches: bracteas nearly heart-shaped: (all the leaves uniform: nectaries rhomboid, bicornate: capsule smooth. E.)

E. Bot. 1399—*Hall. Hist. Helv.* 1046—*Scop. Carn.* 580—*Fuchs.* 812.

(Root woody, creeping. *Stems* one to two feet high, upright, smooth. Lateral branches numerous, leafy, chiefly without flowers, except the uppermost. Capsule without warts or hairs. Nectary-tawny brown. E.)

LEAFY-BRANCHED SPURGE. (SPURGE FLAX. Irish: *Gear Neve.* E.) Sent by Mr. Brown, as found in the Hopetown woods, Linlithgowshire, by Mr. J. M'Ray; and also in a wood about sixteen miles south from Edinburgh by Mr. Keil; in both these places undoubtedly wild. (At Slinfold, Sussex, plentifully near the Parsonage. Mr. Borrer, in Bot. Guide. P. July. E.)*

E. CHARACIAS. (Umbel of numerous forked downy branches, with axillary crowded stalks beneath: bracteas somewhat pointed, perfoliate: leaves lanceolate, downy: capsule hairy. E.)

Jacq. Ic. i.—(*E. Bot.* 442. E.)—*Kniph.* 1—*Rin. Tetr.* 227. *Esula caule crasso.*—*Clus.* i. 188. 1—*Dod.* 368. 2—*Lob. Obs.* 194. 2—*Ger. Em.* 499. 8—*Park.* 186. f. 2, from the left.—*J. B.* iii. 672—*Matth.* 1250.

(Stem shrubby, three or four feet high. E.) Whole plant, except the flowers, woolly. The stem, the edges, and the mid-ribs of the lower leaves sometimes tinged with red. Lateral fruit-stalks numerous, solitary. Umbel spokes seven or eight, less than an inch in length. Involucrum leaves inversely egg-shaped, entire. Involucellum leaflets slightly notched at the end. Petals dark purple, almost black. Germens very woolly.

RED SHRUBBY SPURGE. Woods and hedges, rare. (Not now to be found) in Heywood Park; see Ray, and Plot's Staffordshire. On Malvern Hill, between the Inn and the Wells. Near the great road betwixt Yoxall and Sudbury, Needwood Forest. Mr. Whately. (There is reason to apprehend that this rare plant has disappeared from the latter situation within these few years, the forest having been inclosed. E.)

S. Marsh.

* (The berries, bruised, applied to warts and such like excrescences, will speedily remove them. E.)

† The powdered leaves, in doses of fifteen to twenty-five grains, are cathartic. The juice of every species of Spurge is so acrid, that it corrodes and ulcerates the body wherever it is applied, so that physicians have seldom ventured to use it internally. Warts or corns anointed with the juice soon disappear. A drop of it put into the hollow of a decayed and aching tooth, destroy the nerve, and consequently removes the pain. It is sometimes rubbed behind the ears, that it may blister, and by that means give relief. (In case of dangerous inflammation from the recommends oil plentifully applied. Indeed we might infer that a Euphorbia pical species for the de

